

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Travaux publics et Services gouvernementaux
Canada
Place Bonaventure, portail Sud-Est
800, rue de La Gauchetière Ouest
7^{ème} étage
Montréal
Québec
H5A 1L6
FAX pour soumissions: (514) 496-3822

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 Characterization -- St-Edmond	
Solicitation No. - N° de l'invitation EF928-130801/A	Date 2012-08-02
Client Reference No. - N° de référence du client EF928-13-0801	
GETS Reference No. - N° de référence de SEAG PW-\$MTC-250-12108	
File No. - N° de dossier MTC-2-35081 (250)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2012-09-12	
Time Zone Fuseau horaire Heure Avancée de l'Est HAE	
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: Cyr, Nicolas	Buyer Id - Id de l'acheteur mtc250
Telephone No. - N° de téléphone (514) 496-3389 ()	FAX No. - N° de FAX (514) 496-3822
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: Saint-Germain Foundry 348 du 10th Rang (Rural Road) Saint-Edmond-de-Grantham (QC)	

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

Travaux publics et Services gouvernementaux Canada
Place Bonaventure, portail Sud-Est
800, rue de La Gauchetière Ouest
7^{ème} étage
Montréal
Québec
H5A 1L6

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

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Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

mtc250

Client Ref. No. - N° de réf. du client

EF928-13-0801

File No. - N° du dossier

MTC-2-35081

CCC No./N° CCC - FMS No/ N° VME

PART 1 - GENERAL INFORMATION

1. Security Requirement

There is no security requirement associated with the requirement.

2. Statement of Work

The Work to be performed is detailed under Article 2 of the resulting contract clauses.

3. Debriefings

After contract award, 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>) 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 (2012-07-11) 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 seven (7) 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 Quebec

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 (4 hard copies)
Section II: Financial Bid (2 hard copies)
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>). To assist Canada in reaching its objectives, bidders are encouraged to:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and/or 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 Goods and Services Tax (GST) or Harmonized Sales Tax (HST) must be shown separately, if applicable.

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

Provide CVs for the 5 persons below (minimum 1 page per person) :

1. The project authority must be an expert appearing on the list of experts under Division IV.2.1 of the Environment Quality Act of the Centre d'expertise en analyse environnementale du Québec (CEAEQ).;
2. The project manager must have at least 10 years experience in environmental science, specifically in contaminated site characterization and rehabilitation;
3. The project manager replacement must have at least 10 years experience in environmental science, specifically in contaminated site characterization and rehabilitation;
4. The supervision of fieldwork must be performed by a technician having at least 5 years experience in environmental science, specifically in contaminated site characterization and rehabilitation; and,
5. The fieldwork technician replacement must have at least 5 years experience in environmental science, specifically in contaminated site characterization and rehabilitation.

1.1.2 Point Rated Technical Criteria

1 Understanding of the mandate and methodology

A. Understanding of the project

A description of the understanding of the objectives of the first mandate, challenges and critical steps of the first mandate and the final product expected and its usefulness for PWGSC;

B. General description of the work and methodology

A general description of the methodology and the work, in particular, critical elements to fulfill project objectives. The description must include, with out being limited to :

- a description of the approach to be used to fulfill project objectives;
- a description of the preparation necessary prior to arrival at the site; and,
- a description of the chosen approach for the evaluation and demonstration of the percentage of waste and soil in the smelting residues.

2 Experience and expertise of the firm

A. Firm's experience in similar projects

Provide a description of five (5) projects successfully completed within the last five (5) years that demonstrate that your firm has worked in each of the required special fields :

- contaminated site characterization including waste, surface water, sediment and/or airborne contamination characterization;
- contaminated site rehabilitation/management option evaluation (risk analysis and rehabilitation);
- rehabilitation plan preparation based on waste management; and,
- rehabilitation work supervision.

B. Personnel's Experience

Provide copies of the CVs (at least one page) for project authority, project manager and fieldwork manager (the people who will be in the field during fieldwork) and the two replacements.

The bid's rated technical criteria will be evaluated according to the following weighting:

.1 Understanding of mandate and methodology (40 points)**A. Understanding of the project (20 points)**

Understanding of the objectives of the first mandate (5 points);
Description of the challenges and critical steps of the first mandate (10 points); and
Description of the final product expected and its usefulness for PWGSC (5 points).

B. General work description and methodology (20 points)

General description of the methodology and work to be performed (4 points);
Description of the approach to be used to fulfill project objectives (4 points);
Description of the preparation necessary prior to arrival at the site (4 points); and,
Demonstration of the percentage of waste in the smelting residues (8 points).

.2 Experience and expertise of the firm (60 points)**A. Firm's execution of similar projects (30 points: 6 points/ project)****B. Experience of proposed personnel (30 points)**

Project authority (5 points);
Project manager (10 points);
Project manager replacement (5 points);
Technician (5 points) and,
Technician replacement (5 points).

Total: 100 points

1.2 Financial Evaluation

The price of the bid will be evaluated in Canadian dollars, the Goods and Services Tax or the Harmonized Sales Tax excluded, FOB destination, Canadian customs duties and excise taxes included.

2. Basis of Selection

To be acceptable, a bid must:

- Meet all the required technical criteria; and,
- Obtain a passing mark of 60% for each of the rated technical criteria.
- Obtain a global rate of at least 70 %.

A bid must comply with all requirements of the bid solicitation 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 to be awarded a contract. Canada will declare a bid non-responsive if the required certifications are not completed and submitted as requested.

Compliance with the certifications bidders provide to Canada is subject to verification by Canada during the bid evaluation period (before award of a contract) and after award of a contract. The Contracting Authority will have the right to ask for additional information to verify bidders' compliance with the certifications before award of a contract. The bid will be declared non-responsive if any certification made by the Bidder is untrue, whether made knowingly or unknowingly. Failure to comply with the certifications or to comply with the request of the Contracting Authority for additional information will also render the bid non-responsive.

Remark to Contracting Authority: Pursuant to section 01 of Standard Instructions 2003 and 2004, a Consent to a Criminal Record Verification form (PWGSC-TPSGC 229), must be submitted with the bid, by the bid solicitation closing date, for each individual who is currently on the Bidder's Board of Directors. Consult 4.45 and 5.16 of the Supply Manual for more information.

1. Code of Conduct Certifications - Consent to a Criminal Record Verification

1.1 Bidders must submit with their bid, by the bid solicitation closing date:

- (a) a complete list of names of all individuals who are currently directors of the Bidder;
- (b) a properly completed and signed form Consent to a Criminal Record Verification (PWGSC-TPSGC 229), for each individual named in the list.

2. Certifications Precedent to Contract Award

The certifications listed below should be completed and submitted with the bid, but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

2.1 Federal Contractors Program - Certification

1. The Federal Contractors Program (FCP) requires that some suppliers, including a supplier who is a member of a joint venture, bidding for federal government contracts, valued at \$200,000 or more (including all applicable taxes), make a formal commitment to implement employment equity. This is a condition precedent to contract award. If the Bidder, or, if the Bidder is a joint venture and if any member of the joint venture, is subject to the FCP, evidence of its commitment must be provided before the award of the Contract.

Suppliers who have been declared ineligible contractors by Human Resources and Skills Development Canada (HRSDC) are no longer eligible to receive government contracts over the threshold for solicitation of bids as set out in the Government Contracts Regulations. Suppliers may be declared ineligible contractors either as a result of a finding of non-compliance by HRSDC, or following their voluntary withdrawal from the FCP for a reason other than the reduction of their workforce to less than 100 employees. Any bids from ineligible contractors, including a bid from a joint venture that has a member who is an ineligible contractor, will be declared non-responsive.

2. If the Bidder does not fall within the exceptions enumerated in 3.(a) or (b) below, or does not have a valid certificate number confirming its adherence to the FCP, the Bidder must fax (819-953-8768) a copy of the signed form LAB 1168, Certificate of Commitment to Implement Employment Equity, to the Labour Branch of HRSDC.
3. The Bidder, or, if the Bidder is a joint venture the member of the joint venture, certifies its status with the FCP, as follows:

The Bidder or the member of the joint venture

- a. is not subject to the FCP, having a workforce of less than 100 full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada;
- b. is not subject to the FCP, being a regulated employer under the Employment Equity Act, S.C. 1995, c. 44;
- c. is subject to the requirements of the FCP, having a workforce of 100 or more full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada, but has not previously obtained a certificate number from HRSDC (having not bid on requirements of \$200,000 or more), in which case a duly signed certificate of commitment is attached;
- d. is subject to the FCP, and has a valid certificate number as follows: _____ (e.g. has not been declared an ineligible contractor by HRSDC).

Further information on the FCP is available on the HRSDC Web site.

2.2 Former Public Servant Certification

Contracts with former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts with FPS, bidders must provide the information required below.

Definitions

For the purposes of this clause, "former public servant" is any former member of a department as defined in the Financial Administration Act, R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

- a. an individual;
- b. an individual who has incorporated;
- c. a partnership made of former public servants; or
- d. a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means, in the context of the fee abatement formula, a pension or annual allowance paid under the Public Service Superannuation Act (PSSA), R.S., 1985, c.P-36, and any increases paid pursuant to the Supplementary Retirement Benefits Act, R.S., 1985, c.S-24 as it affects the PSSA. It does not include pensions payable pursuant to the Canadian Forces Superannuation Act, R.S., 1985, c.C-17, the Defence Services Pension Continuation Act, 1970, c.D-3, the Royal Canadian Mounted Police Pension Continuation Act, 1970, c.R-10, and the Royal Canadian Mounted Police Superannuation Act, R.S., 1985, c.R-11, the Members of Parliament Retiring Allowances Act, R.S., 1985, c.M-5, and that portion of pension payable to the Canada Pension Plan Act, R.S., 1985, c.C-8.

Former Public Servant in Receipt of a Pension

Is the Bidder a FPS in receipt of a pension as defined above? Yes () No ()

If so, the Bidder must provide the following information:

- a. name of former public servant;
- b. date of termination of employment or retirement from the Public Service.

Work Force Reduction Program

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of a work force reduction program? Yes () No ()

If so, the Bidder must provide the following information:

- a. name of former public servant;
- b. conditions of the lump sum payment incentive;
- c. date of termination of employment;
- d. amount of lump sum payment;
- e. rate of pay on which lump sum payment is based;
- f. period of lump sum payment including start date, end date and number of weeks;
- g. number and amount (professional fees) of other contracts subject to the restrictions of a work force reduction program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is \$5,000, including the Goods and Services Tax or Harmonized Sales Tax.

Certification

By submitting a bid, the Bidder certifies that the information submitted by the Bidder in response to the above requirements is accurate and complete.

2.3 Status and Availability of Resources

The Bidder certifies that, should it be awarded a contract as a result of the bid solicitation, every individual proposed in its bid will be available to perform the Work as required by Canada's representatives and at the time specified in the bid solicitation or agreed to with Canada's representatives. If for reasons beyond its control, the Bidder is unable to provide the services of an individual named in its bid, the Bidder may propose a substitute with similar qualifications and experience. The Bidder must advise the Contracting Authority of the reason for the substitution and provide the name, qualifications and experience of the proposed replacement. For the purposes of this clause, only the following reasons will be considered as beyond the control of the Bidder: death, sickness, maternity and parental leave, retirement, resignation, dismissal for cause or termination of an agreement for default.

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Buyer ID - Id de l'acheteur

mtc250

Client Ref. No. - N° de réf. du client

EF928-13-0801

File No. - N° du dossier

MTC-2-35081

CCC No./N° CCC - FMS No/ N° VME

If the Bidder has proposed any individual who is not an employee of the Bidder, the Bidder certifies that it has the permission from that individual to propose his/her services in relation to the Work to be performed and to submit his/her résumé to Canada. The Bidder must, upon request from the Contracting Authority, provide a written confirmation, signed by the individual, of the permission given to the Bidder and of his/her availability. Failure to comply with the request may result in the bid being declared non-responsive.

2.4 Education and Experience

The Bidder certifies that all the information provided in the résumés and supporting material submitted with its bid, particularly the information pertaining to education, achievements, experience and work history, has been verified by the Bidder to be true and accurate. Furthermore, the Bidder warrants that every individual proposed by the Bidder for the requirement is capable of performing the Work described in the resulting contract.

PART 6 - RESULTING CONTRACT CLAUSES

1. Security Requirement

There is no security requirement associated with the requirement.

2. Statement of Work

The Contractor must perform the Work in accordance with the Statement of Work at Appendix 1.

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>) issued by Public Works and Government Services Canada.

3.1 General Conditions

The Consultant understands and agrees that upon acceptance of the offer by Canada, a binding Agreement shall be formed between Canada and the Consultant and the documents forming the Agreement shall be the following:

R1210D (2012-07-16), GC1 - General Provisions
R1215D (2011-05-16), GC2 - Administration of the Contract
R1220D (2011-05-16), GC3 - Consultant Services
R1225D (2012-07-16), GC4 - Intellectual Property
R1230D (2012-07-16), GC5 - Terms of Payment
R1235D (2011-05-16), GC6 - Changes
R1240D (2011-05-16), GC7 - Taking the Services Out of the Consultant's Hands, Suspension or Termination
R1245D (2012-07-16), GC8 - Dispute Resolution
R1250D (2012-07-16), GC9 - Indemnification

4. Term of Contract

4.1 Period of the Contract

The period of the Contract is from date of Contract to 31 décembre 2014 inclusive.

The Work (RS1-RS2) is to be performed during the period of (*date of issue*) to January 16, 2013.

4.2 Option to Extend the Contract

The Contractor grants to Canada the irrevocable option to acquire the goods, services or both described at Appendix 1 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 within 30 days after contract award by sending a written notice to the Contractor.

5. Authorities**5.1 Contracting Authority**

Name: Nicolas Cyr
 Title: Supply Specialist
 Public Works and Government Services Canada
 Address: Place Bonaventure, Portal South-East
 800 de la Gauchetiere West, Suite 7300
 Montreal (QC), H5A 1L6
 Telephone: 514-496-3389
 Facsimile: 514-496-3822
 E-mail address: nicolas.cyr@tpsgc-pwgsc.gc.ca

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

5.2 Project Authority

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

Telephone : ____-____-_____
 Facsimile: ____-____-_____
 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

Name: _____
 Title: _____
 Telephone Number: _____
 Facsimile Number: _____
 Email Address: _____

6. Certifications

Compliance with the certifications 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 or 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.

7. Applicable Laws

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

8. 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 general conditions
 - R1210D (2012-07-16), GC1 - General Provisions
 - R1215D (2011-05-16), GC2 - Administration of the Contract
 - R1220D (2011-05-16), GC3 - Consultant Services
 - R1225D (2012-07-16), GC4 - Intellectual Property
 - R1230D (2012-07-16), GC5 - Terms of Payment
 - R1235D (2011-05-16), GC6 - Changes
 - R1240D (2011-05-16), GC7 - Taking the Services Out of the Consultant's Hands, Suspension or Termination
 - R1245D (2012-07-16), GC8 - Dispute Resolution
 - R1250D (2012-07-16), GC9 - Indemnification
- (c) Appendix 1, Statement of Work;
- (d) Appendix A, Proposal;
- (e) Appendix B, Site Plan
- (f) the Contractor's bid dated _____

9. SACC Manual Clauses

A9068C Government Site Regulations



REQUEST FOR PROPOSALS

Environmental Characterization and Evaluation of Rehabilitation/Management Options Old Saint-Germain Foundry, Saint-Edmond-de-Grantham

ANNEX 1

Requested by: **Environmental Services**
Public Works and Government Services Canada
Quebec Region

Project No.: **R.057850.001**

July 2012

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1.0 BACKGROUND

Public Works and Government Services Canada (PWGSC) is interested in retaining the services of an environmental consulting firm to obtain recommendations on the management of the environmentally impacted site of the old Saint-Germain foundry property at 1348-10^{ème} Rang in Saint-Edmond-de-Grantham.

Since 1993, several small- and large-scale environmental characterizations have been carried out in the old industrial sectors of this property. In 2011–2012, a Phase I environmental site assessment (ESA) was undertaken of the entire property.

The main objective of this mandate is to present PWGSC with different options for managing the environmental problems associated with the site and to evaluate the costs and constraints associated with each option. In addition, the proponent is required to determine the impact on adjacent properties by using existing information and gathering new information.

2.0 SITE DESCRIPTION

The property under study occupies an area of 133,601 m² and its topography is relatively flat. Although it is located in an agricultural zone, most of it is wooded. The cleared area, which covers an estimated 18,000 m², is the site of the old foundry. This area is surrounded by a ditch that drains into a second ditch that runs along 10^{ème} Rang, and then discharges into the David River, about 850 metres from the site. The site's groundwater appears to flow in a southwesterly direction, that is, toward 10^{ème} Rang.

Smelting operations were carried out at the site from 1977 to 2004 to recover metals, mainly copper, lead, aluminum and white metal, from different types of metal waste (electrical wire, car parts, accumulators, batteries, etc.). This waste was stored directly on the ground at the site and later burned in an oven or in an open area with waste oil or tires. The recovered metal was sold. The ash from the burning operations (slag) was either disposed of off-site, stockpiled or buried on the site.

The property under study is not being used at present. Only a few structures and buildings remain standing and the site is littered with ash, waste materials, slag and metal debris.

Numerous environmental studies and inspections have been conducted at the site by the Quebec Department of Sustainable Development, Environment and Parks (MDDEP) since the company Fonderie Germain Inc. ceased operations in 2004.

The surficial deposits consist primarily of a layer of smelting residues with slag and various types of debris (making up between 1 and 50% of the total), including wood, electrical wire, metal parts and steel pipes, bricks, cement blocks, tires, etc. Data compiled from various studies indicate that approximately 1,035 m³ of smelting residues are stockpiled on the site under study. In addition, an estimated 16,983 m³ of material is

believed to be buried at the site, at an average depth of 0.94 metres and up to a maximum depth of 2.7 metres.

According to the results of analyses, the smelting residues present at the site can be considered hazardous waste pursuant to Quebec's *Regulation respecting hazardous materials* (HMR), given that their leachate contains lead concentrations exceeding allowable levels. The residues also contain several other metals that may contaminate the underlying soil and groundwater.

Previous environmental characterization work has shown that copper and zinc levels higher than the C criteria in the MDDEP's Soil Protection and Contaminated Sites Rehabilitation Policy ("the Policy") are present in the soil beneath the buried hazardous waste. According to these studies, an estimated 5,075 m³ of soil in the area around the old foundry is contaminated at levels exceeding the C criteria set out in the Policy. In addition, in some sectors, sampling revealed the presence of soil contaminated with concentrations of different metals falling within the B-C contamination levels of the MDDEP Policy. However, it should be noted that the vertical extent of the contamination was only estimated and has not been adequately defined.

In 2008, the MDDEP took groundwater samples from wells installed in exploratory trenches, following purging with a peristaltic pump. In 2011, Franz Environmental Inc. installed five (5) new wells in order to conduct groundwater sampling in them as well as in two wells (PZ-3 and PZ-4) installed in 1998 by the consultant MBF. Low-flow sampling techniques were employed for the groundwater sampling carried out in the seven wells in 2011. No dense or light free-phase hydrocarbons have been intercepted to date. The groundwater lies at a depth of 0.33 to 1.03 metres below the ground surface.

The environmental studies conducted in 2007, 2008 and 2011–2012 showed that the quality of the groundwater and the surface water at the site did not meet the applicable provincial criteria and federal guidelines. In fact, in some monitoring wells, groundwater quality does not meet the applicable water quality guideline levels for heavy metals, cyanides, fluorides, sulphides, dioxins and furans and/or phenol. In addition, an analysis of surface water samples collected in the ditch surrounding the old foundry site revealed concentrations of heavy metals, pyrene and/or fluorides exceeding the applicable provincial criteria and federal guidelines.

Appendix B contains a map of the southern portion of the study site, where all the previous work was carried out.

2.1 Previous environmental studies

The following studies and documents will be available after the contract is awarded:

1. Franz Environmental Inc., Caractérisation Environnementale de l'eau souterraine et de l'eau de surface – Ancienne Fonderie St-Germain, 1348, 10^e rang, Saint-Edmond-de-Grantham, Québec – Rapport préliminaire – Février 2012

2. SNC-Lavalin Environnement, Évaluation environnementale de site Phase I – Ancienne Fonderie Saint-Germain, 1348, 10^e rang, Saint-Edmond-de-Grantham, no de dossier 608578 – Février 2012
3. Biogénie, Évaluation Environnementale de Site Phase II Complémentaire – Ancienne fonderie située au 348 10e rang, Saint-Edmond-de-Grantham, Québec – Rapport final – MDDEP – Février 2010
4. Guilbert, Josianne et Yves Lahaie, Rapport technique Fonderie Saint-Germain – échantillonnage des eaux souterrain et du sol – 22 juillet 2008, numéro de dossier 7610-17-01-00362-01, MDDEP, 10 novembre 2008
5. Guilbert, Josianne et Yves Lahaie, Rapport technique Fonderie Saint-Germain – Inspection du lieu et installation de puits d’observation, numéro de dossier 7610-17-01-00362-01, MDDEP, 5 novembre 2008
6. A.A.C.T. Technologie inc., Analyses et recommandations pour diminuer l’impact de la Fonderie Saint-Germain sur l’environnement – Ministère de l’environnement et de la faune du Québec – juillet 2001
7. Laboratoire de services spécialisés MBF Itée, Analyse d’eau et de cendres – Fonderie Saint-Germain Inc – Saint-Germain-de-Grantham N/Dossier N°637-002-004, 12 juin 2001
8. Laboratoire de services spécialisés MBF Itée, Échantillonnage de l’eau souterraine – fonderie Saint-Germain – Saint-Edmond-de-Grantham, N/Dossier N° 637-002-003, 1998
9. Laboratoire de services spécialisés MBF Itée, Caractérisation préliminaire des sols – Fonderie Saint-Germain – Saint-Edmond-de-Grantham N/Dossier No 637-002-002, 25 novembre 1993
10. Environnement Conseil BGA inc., Programme de caractérisation - Fonderie Saint-Germain inc., août 1993
11. Inspection reports, notices of violation (MDDEP) and communications

3.0 REQUIRED SERVICES (RS)

The ultimate goal of the work is to provide the information needed to assess the different rehabilitation and management options for addressing the issues at the site, so that a specific recommendation can be formulated for the old foundry property.

3.1 Description of work that is part of this mandate

RS 1-RS-2 STRATEGY DEVELOPMENT – STUDIES

The objectives are to do the following:

1. Examine the existing documentation and identify several site rehabilitation and management options;
2. Identify information deficiencies related to the options considered and make any necessary adjustments to the characterization plan;
3. Plan and carry out data collection;

4. Design and develop four (4) site rehabilitation and management options by defining the scope of work and preparing the timetables and cost estimates (class D) for each option; and,
5. Recommend a given option and provide the rationale for the recommendation.

For each objective, the consultant is required to perform tasks including, but not limited to, the following:

1. Examine the existing documentation and consider several rehabilitation and management options:
 - Analyze the relevant information on file;
 - Visit the site and conduct a visual assessment of the existing conditions;
 - Have PWGSC validate all corrections made to clarify ambiguities in existing and new information;
 - Consider several decontamination and risk management options or combinations of options;
 - Examine the needs from the standpoint of existing and emerging technologies; and,
 - Use PWGSC's Guidance and Orientation for the Selection of Technologies (GOST) database and submit the results obtained: <http://gost.irb-bri.cnrc-nrc.gc.ca/home.aspx>.
2. Identify information deficiencies and modify the characterization plan:
 - Check all of the requirements of the appropriate municipal, provincial and federal authorities in relation to the options considered;
 - Analyze the environmental and sustainable development issues as well as technical problems that may be raised in relation to the different options;
 - Modify the characterization plan¹, justify and obtain approval for the changes from the PWGSC representative; and,
 - In the event that a more in-depth assessment is required, submit a written recommendation to the PWGSC project manager regarding the requisite studies.
3. Plan and carry out data collection:
 - Prepare an occupational health and safety plan and notify PWGSC in advance of the date of commencement of work at the site;
 - Carry out the work previously approved by PWGSC and keep the PWGSC representative informed while the work is under way; and
 - For data interpretation purposes, combine the new data with the existing data.
4. Develop options and draw up associated timetables and cost estimates:

¹ The consultant will be responsible for producing the characterization plan; the information obtained during this process must make it possible to achieve the objectives of the mandate. The scope of work is developed solely for tendering purposes.

- Two hypothetical scenarios must be considered: one where PWGSC divests itself of the property, and another where PWGSC remains owner of the site. Develop at least four rehabilitation and management options (at least two options per scenario), with Class D cost estimates (see section 5.3), which address the problem to be resolved;
- At a scheduled meeting, reach agreement with PWGSC on the magnitude and extent of the options to be developed;
- Identify benefits, drawbacks and risks by emphasizing how and to what extent each option can address each problem and providing the rationale for recommending a given option;
- For each option, provide an overview of the research and analysis that will be required in the future to determine the feasibility of the project;
- For each option, prepare a project schedule with a chart that shows all the activities, stages, critical timelines and long lead time items, as well as the time required to produce the bid documents, including the evaluations and approval time frames;
- At the end of this process, the consultant will recommend an option to PWGSC for the continuation of the project;
- Produce two technical reports: a characterization report in certifiable format and a report on the assessment of options; and,
- Attach all pertinent documentation and references necessary to understand the report.

5. Recommend an option and provide a rationale for the recommendation.

Level of effort required for fieldwork and data collection (for tendering purposes)

The work must be performed in accordance with the specifications of this Request for Proposals, the Canadian Standards Association CSA-Z769-00 (R2008) standard and the federal and provincial documentation listed in Section 4.0. The soil and groundwater characterization work must take in all the sectors and potential contamination sources identified in the Phase I ESA.

For tendering purposes, PWGSC plans to have the following work carried out:

- Excavation of 40 exploratory trenches 4.0 metres deep in natural soil;
- Drilling of 6 standard boreholes approximately 6.0 metres deep in unconsolidated deposits. Installation of 6 groundwater monitoring wells approximately 6.0 metres deep in the boreholes;
- Drilling of 3 standard boreholes in unconsolidated deposits down to the bedrock (until drill refusal, around 25 m deep). Installation of 3 groundwater monitoring wells in the boreholes;
- Drilling of 8 standard boreholes approximately 6.0 metres deep in unconsolidated deposits, without monitoring wells;

- Collection of 8 surface sediment samples (0 m to 0.30 m) and 5 surface water samples from the ditches surrounding the problem area;
- Evaluation of the direction of prevailing winds and collection of 5 surface soil samples to determine whether atmospheric transport of contaminants has affected the wooded areas of the property;
- Evaluation and demonstration of the percentage of waste and soil contained in smelting residues (by grain-size analysis and by microscopy);
- Sampling of groundwater in the installed wells (9) and the existing wells (7) at the site;
- Conducting of five treatment tests on samples consisting of 20 litres of smelting residues at a treatment centre/disposal site, in order to estimate the cost of treatment/disposal;
- Classification of site according to the National Classification System for Contaminated Sites (NCS) 2008; and
- Preparation of a presentation for PWGSC officials to set forth the options and discuss the issues specific to PWGSC in order to make a recommendation.

The work also includes the following:

- Continuous sampling of soil in the trenches and boreholes;
- Development of all new monitoring wells using a mechanical actuator with a surge block;
- Sealing of wells with cement-bentonite grout;
- Three (3) rising-head permeability tests after the wells have been developed; and
- Sampling of groundwater in the installed wells and the existing wells using the low-flow sampling method.

Analysis program

The samples will undergo the following analyses:

Soil/sediment

- Metals (Ag, As, Ba, Cd, B, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Se and Zn)
- Mercury
- Polycyclic aromatic hydrocarbons (PAHs)
- Petroleum hydrocarbons C₁₀-C₅₀
- Petroleum hydrocarbon fractions (F₁-F₄)
- Volatile organic compounds (VOCs)
- Chlorobenzenes
- PCBs (congeners)
- pH
- Dioxins and furans

Groundwater

- Metals (Ag, Al, As, Ba, Be, B, Cd, Cr, Co, Cu, Fe, Sb, Se, Sn, Mn, Mo, Na, Ni, Pb and Zn)
- Mercury

- Polycyclic aromatic hydrocarbons (PAHs)
- Petroleum hydrocarbons C₁₀-C₅₀
- Petroleum hydrocarbon fractions (F₁ and F₂)
- Phenolic compounds
- Volatile organic compounds
- 2,4 dinitrotoluene, nitrobenzene
- Bromide
- Cyanides
- Fluorides
- Sulphides
- Chlorides
- Dioxins and furans
- Phthalates
- PCBs (congeners)
- pH
- Hardness

Surface water

- Metals (Ag, Al, As, B, Cd, Cr_{hexavalent}, Cr_{trivalent}, Cu, Fe, Mo, Ni, Pb and Zn)
- Mercury
- Polycyclic aromatic hydrocarbons (PAHs)
- Petroleum hydrocarbons C₁₀-C₅₀
- Volatile organic compounds (VOCs)
- Cyanides
- Fluorides
- Sulphides
- Dioxins and furans
- pH
- Hardness

The consultant must collect samples and ship them to an accredited laboratory using the appropriate preservation procedures. In addition, the consultant must obtain and interpret the results of the analyses.

The consultant must consider the relevance of analyzing other parameters and justify any additional parameters selected. In such a case, PWGSC must approve the analyses in advance.

The consultant is to act as the PWGSC representative while the work involved in installing the monitoring wells is carried out.

3.2 Description of work that could be part of a later mandate²

RS 3-4 DESIGN – REHABILITATION OR MANAGEMENT PLAN

Objective

The consultant may be asked to further develop the rehabilitation or management plan for one of the chosen options. The consultant may be required to prepare the specifications, drawings and tender documents as well as the final cost estimate for the project.

General

PWGSC will confirm in writing, if applicable, which of the proposed options is to be developed by the consultant. If modifications are necessary, describe all changes to be made, analyze the impact on all project components and resubmit everything for approval, if necessary.

The mandate may include the following activities:

- Expand and clarify the objectives;
- Submit rehabilitation and/or management plans to government or local authorities where necessary;
- Obtain certification of studies, as needed;
- Conduct an ongoing review of all acts and regulations during project planning;
- Draw up a list of all sections to be consulted in the National Master Specification and produce a complete specification encompassing options with regard to sustainable development and greening;
- The consultant must prepare minutes of meetings and distribute them to the participants;
- Update the timetable;
- Prepare a presentation at the 99% document completion stage on the rehabilitation plan and the specifications;
- Produce the final version of the rehabilitation plan ;
- Produce the final versions of drawings and specifications signed and sealed by an engineer; and
- Approach the MDDEP to obtain approval for the rehabilitation plan.

During planning, the consultant must incorporate environmental protection and sustainable development components from the following incomplete list:

- Develop the design and evaluate options focusing on beneficial environmental strategies; and
- Integrate the results of the screening environmental assessment conducted under the CEEA, for example, erosion and sediment control (reduction of TSS).

² Please note that hourly rate for RS-3 to RS-6 in Appendix AV part will be used for bid evaluation

RS-5 TENDER AND CONTRACT AWARD

PWGSC will handle this part of the project. However, the consultant may be involved in the preparation of replies to bidders' questions.

RS-6 MONITORING WORK

Objective

Make sure that the work performed by the contractor hired by PWGSC complies with the specifications of the rehabilitation and/or management plans as well as the applicable regulations.

The scope of the work for the selected consultant is outlined below, for information purposes:

- Review and analysis of the management plan for excavated material provided by the contractor and the environmental protection plan;
- Review of the contractor's occupational health and safety plan and preparation of comments and recommendations for PWGSC regarding approval of the occupational health and safety plan;
- Preparations for, chairing of and drafting of minutes of start-up and follow-up meetings;
- Monitoring of the excavation, segregation and disposal or treatment of contaminated soil during the entire work period;
- Periodic monitoring, by lot, of the quantities of excavated material placed in piles and the quantities of excavated material disposed of off-site, reused at the site, imported to the site or treated;
- Monitoring to ensure that stockpiling is done properly;
- Collection of soil or waste samples from temporary piles and of excavation bottom and sidewall samples;
- Where required, monitoring of activities related to management of the water that collects in the excavations;
- Monitoring of ground and surface water quality;
- Monitoring of backfilling, compacting and grading operations;
- Preparation of required transport documents and confirmation that all loads shipped have been sent to authorized disposal sites; and
- Drafting of a report and certification, if necessary.

4.0 REFERENCES

The consultant must perform the work in accordance with the applicable federal, provincial and municipal acts, regulations, codes, guides and standards, which include, but are not limited to, the following:

- *Canadian Environmental Protection Act;*
- *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations;*

- *Fisheries Act*;
- Canadian Environmental Quality Guidelines;
- Canadian Drinking Water Guidelines (Health Canada);
- Canada-Wide Standards on Petroleum Hydrocarbons (PHC) in Soil (CCME);
- Canada-Wide Standards on Petroleum Hydrocarbons in Soil (PHC): Technical Supplement (CCME)
- Federal Approach to Contaminated Sites;
- Guidance Manual on Sampling, Analysis, and Data Management for Contaminated Sites, Volume I: Main Report (CCME, 1993);
- Guidance Manual on Sampling, Analysis, and Data Management for Contaminated Sites, Volume II: Analytical Method Summaries (CCME, 1993);
- *Environment Quality Act*;
- *Land Protection and Rehabilitation Regulation*;
- *Regulation respecting the burial of contaminated soils*;
- *Regulation respecting hazardous materials*;
- *Regulation respecting the landfilling and incineration of residual materials*;
- Soil Protection and Contaminated Sites Rehabilitation Policy (MDDEP);
- Guidance Document on Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites, May 2010;
- Guide de caractérisation des terrains (MDDEP);
- Guide d'échantillonnage à des fins d'analyses environnementales, Cahier 1 - Généralités (MDDEP);
- Guide d'échantillonnage à des fins d'analyses environnementales. Cahier 3 - Échantillonnage des eaux souterraines (MDDEP) Révision du 30 juin 2011;
- Guide d'échantillonnage à des fins d'analyses environnementales, Cahier 5 - Échantillonnage des sols (MDDEP);
- Guide d'échantillonnage à des fins d'analyses environnementales, Cahier 8 - Échantillonnage des matières dangereuses (MDDEP);
- Mode de conservation pour l'échantillonnage des sols (Centre d'expertise en analyse environnementale du Québec);
- Mode de conservation pour l'échantillonnage des eaux souterraines (Centre d'expertise en analyse environnementale du Québec);
- Liste des méthodes suggérées pour la réalisation des analyses de laboratoire (MDDEP);
- Lignes directrices pour le traitement des sols par biodégradation, bioventilation ou volatilisation (MDDEP);
- List of authorized treatment centres for contaminated soil (MDDEP);

- List of authorized contaminated soil burial sites (MDDEP);
- La gestion des matériaux de démantèlement – Guide de bonnes pratiques (MDDEP);
- Guide de valorisation des matières résiduelles inorganiques non dangereuses de source industrielle comme matériaux de construction (MDDEP);
- Workplace Hazardous Material Information System (WHMIS);
- Criteria for the Assessment of Sediment Quality in Quebec and Application Frameworks: Prevention, Dredging and Remediation (Environment Canada);
- Phase II Environmental Site Assessment, CSA-Z769-F00 (C2008).

In the event of omissions or contradictions between these requirements, the most stringent thereof will apply.

The consultant must obtain from federal, provincial and municipal authorities the necessary permits to perform the work and must pay the fees thereof.

5.0 METHODOLOGY

The consultant will act as a representative of PWGSC. There must be close co-operation between the consultant and PWGSC in all decisions made, to ensure that the work proceeds smoothly.

5.1 Meetings and presentations

For tendering purposes, the following must be planned:

- Start-up meeting (PWGSC offices in Montreal)
- Site visit
- Three follow-up meetings (PWGSC offices in Montreal)
- Two presentations of options to PWGSC (PWGSC offices in Montreal)
- A presentation with the partners (MDDEP, Environment Canada, etc)

Following the contract award, a start-up meeting must be held with all the project stakeholders. At this meeting, the consultant must submit a work schedule and clarify the project; and prior to the meeting, the consultant must draw up a list of clarifications and additional information required. The reports will be given to the consultant at this meeting.

During the project, the consultant must attend three meetings at PWGSC offices. In addition, three meetings will be held for the purpose of submitting results and the developed options, including one meeting for managers, which will have minimal technical content.

5.2 Fieldwork

Site access

The consultant must have its own transportation, without support from PWGSC, and pay all travel costs. The project start date must be communicated to PWGSC as soon as possible. PWGSC must be notified 48 hours prior to any planned site visit. The site is enclosed with fencing and locked.

The consultant must have a track-mounted drilling rig in order to reach the locations where boreholes are to be drilled.

Location of infrastructure

Before beginning the characterization work, the consultant will be responsible for locating all underground infrastructure (e.g. Info-Excavation).

Conduct of fieldwork

Excavation of the trenches is the first step. After the trenches are completed, the boreholes will be drilled and the wells installed. After well development, the consultant must wait at least 24 hours before beginning groundwater sampling. This sampling must be done on consecutive days.

Materials and equipment

The consultant must provide all of the materials and equipment required to perform the work and must ensure that this equipment is in proper working order.

The equipment used by the consultant's subcontractor(s) must comply with the guidelines set out in the guides listed in Section 4. This equipment must be able to sample soils, groundwater, surface water and sediment.

Drilling of boreholes

To prevent the entrainment of contaminants to other geological horizons, it is important to avoid injecting a large amount of water during the drilling of boreholes. The use of drilling mud is to be avoided. If water must be injected, the volumes of water used must be recorded and presented in the report and the water used must be removed during well development.

It should be noted that there is no source of water at the site.

In addition to the usual procedures for cleaning sampling equipment, drilling equipment must be steam-cleaned or pressure-cleaned between drillings to prevent cross-contamination.

Monitoring wells

The installed monitoring wells must have a diameter of 2 inches. The annular space of the wells must be sealed with bentonite/cement-bentonite grout injected from one foot above the screen to the land surface. A casing centralizer must be used in deep wells. In addition, there must be an aluminum locking cap attached to the HDPE protective casing at the top of the well.

Monitoring well development

Well development must be done with a mechanical actuator and a surge block. The water injected during drilling of boreholes must be removed, and after well development is complete, the pumped water must be clear. The volume of water pumped during development of the wells must be recorded in the report.

Permeability testing

Rising head permeability tests must be conducted to determine the hydraulic conductivity in the area around the well. These tests must be performed using a pump and a submersible datalogger to detect changes in water level over time.

Soil and waste sampling

The soil and waste must be sampled continuously as stated in Section 3.0.

The sample collection and preservation methodology must comply with the guidelines set out in the guides listed in Section 4.0. The soil sampling methodology, for instance, must take into account, but not be limited to, the stratigraphy encountered, organoleptic indicators of contamination, and stratigraphic unit thickness (separate sampling of stratigraphic units, maximum thickness represented by a 1.0-metre sample).

Measurements of volatile organic compounds (VOCs) must be taken using a gas detector (PID) on all soil samples collected.

Demonstration of the percentage of waste in the smelting residues

At least 10 representative samples must undergo specific analyses to calculate the proportion of waste and soil in the smelting residues and confirm the management method to be employed. Microscope analyses must be conducted, taking into account grain-size distribution so as to define the nature of each grain-size fraction.

Treatment testing

Five 20-litre samples must be collected for the different residues identified. These samples must be shipped to a treatment/disposal centre able to receive the volume of smelting residues present at the site. The goal of the treatment tests is to further refine and validate treatment/disposal costs for the smelting residues in order to arrive at cost estimates.

Groundwater sampling

The new monitoring wells must be developed at least 24 hours before the sampling is conducted. Measurements of levels of groundwater and free-phase products (dense and light) must be taken using an interface probe prior to sampling. The consultant is required to use the low-flow method for groundwater sampling. The physico-chemical parameters to be measured at the site are as follows: pH, temperature, conductivity, dissolved oxygen, turbidity and oxidation-reduction (redox) potential. The methodology described in the MDDEP sampling guide must be used. The Ground Water Sampling Log presented in Figure 2 of the USEPA document "*LOW-FLOW (MINIMAL DRAWDOWN) GROUND-WATER SAMPLING PROCEDURES (USEPA EPA/540/S-95/504)*" must be completed and appended to the report for each well sampled.

Management of wash water, well development water and sampling water

Wash water and water pumped from the wells may not be discarded untreated or without first being sampled and submitted for chemical analyses to demonstrate that it can be safely discharged into the environment. In the proposed price, the consultant must make provision for treatment of the water on site **or** factor in the cost of transport and disposal of the pumped water. A storage method for the water must also be specified.

Sample preservation and transportation

The sample preservation methodology must comply with the guides listed in Section 4.0. The consultant must ensure that the integrity and quality of the samples are preserved during transportation to the laboratory. Only samples requiring analysis are to be sent to the laboratory. The consultant is responsible for preserving the other samples in a proper manner.

Sample nomenclature

Samples must be identified as follows to ensure temporal continuity. For example, the monitoring wells will be identified as 12MW-XX, where 12 indicates the year, PO indicates monitoring well and XX is a sequential number. Use TE for exploratory trenches, ES for surface water and SE for sediment.

Site restoration

The consultant will be responsible for cleaning the site as the work progresses. No waste may be left at the site. After the fieldwork is completed, the site must be restored to its original condition, to the satisfaction of the occupants, on the same day that the sampling is done.

Location of soil borings

All sampling points (monitoring wells, trenches, surface water and sediment) must be surveyed and graded. The coordinates of each point must be transmitted in MTM zone 8, NAD 83 (SCRS). The precision of the co-ordinates must be 0.5 m in X and Y, and 0.001 m in Z.

Quality assurance and control

During all stages of the project, the consultant must implement a quality assurance/quality control (QA/QC) program to ensure the quality and reliability of the data obtained. This program must be applied to the characterization project, for both field sampling and laboratory work. It must include duplicate sampling for quality control, with at least 10% of the samples submitted for chemical analyses being duplicated. Field blanks for volatile compounds must be prepared once a day during groundwater sampling activities. A trip blanks must be included with each shipment of samples to the laboratory.

5.3 Class D cost estimate (order of magnitude)

The objective is to provide an indication of the total project costs for each option on the basis of the information available at the time. The estimate is based on historical financial data for similar work. To the extent possible, it is necessary to take into account all factors that modify the costs.

The estimation process is intended solely to provide an indication (order of magnitude, $\pm 25\%$) of the total project costs and completion date. This estimate is used to establish the indicative estimate required by Treasury Board for preliminary project approval.

The tasks to be performed when preparing the Class D cost estimate include the following:

- Prepare estimates with a detailed breakdown based on project briefs and preliminary concepts or other provisional information;
- Provide advice and recommendations on project planning in order to achieve the most cost-effective project sequence;
- Identify and quantify potential risks and make contingency recommendations in order to minimize negative cost impacts; and
- Identify, forecast and analyze project-related issues, including possible market shortages and potential price fluctuations.

6.0 OCCUPATIONAL HEALTH AND SAFETY

In accepting this contract, the consultant agrees to assume all of the responsibilities normally assigned to the principal contractor under the Quebec *Act respecting occupational health and safety* and to supervise the worksite. Before beginning the work, the consultant must do the following:

- Regardless of the number of workers assigned to the worksite, send the departmental representative a safe work plan (**Occupational Health and Safety Plan***) and a mechanical inspection certificate for the machinery used at the site;
- Ensure that workers have received the training and information they need to perform the work safely, and that all necessary tools and protective equipment are available, comply with the applicable standards, statutes and regulations, and are used;
- Comply at all times with the *Quebec Act respecting occupational health and safety* and the Quebec Safety Code for the Construction Industry;
- Inform workers that they have the right to refuse to perform any work that involves a hazard to their health or safety;
- Mark off, barricade and control access to the work area.

In the event of an unforeseen incident, the consultant must take all necessary measures, including cessation of work, to protect the health and safety of workers and the public, and must contact the departmental representative promptly.

*The Occupational Health and Safety Plan will be specific to the site and the work to be carried out. The consultant will be responsible for implementing the plan during the performance of the work. The Occupational Health and Safety Plan must be submitted to the PWGSC representative one week before the work is slated to begin. A version signed by the subcontractors must be kept at the site while the fieldwork is under way and must be sent to the PWGSC representative after the fieldwork is completed.

7.0 DELIVERABLES

Two reports must be prepared: (1) a characterization report and (2) a report outlining the site rehabilitation and management options. The characterization report must address the site issues and incorporate data from previous studies. The reports must contain pertinent information with respect to the following (without being limited thereto):

1) Environmental characterization

Executive summary (in French and English)

Description of site

- History of work;
- Description of environmental issues.

Methodology

- Location of utilities and underground infrastructure;
- Occupational health and safety;
- Characterization plan;

- Soil borings and installation of monitoring wells;
- Sampling methodologies and sample nomenclature;
- Analysis program;
- Grading and surveying;
- Quality assurance and control program.

Physical characteristics of the study site

- Stratigraphic context;
- Hydrogeological context;
- Direction of prevailing winds;
- Demonstration of percentage of waste and soil in smelting residues;
- Indicators of contamination.

Analysis results

- Interpretation criteria selected (federal and provincial);
- Soil quality (surface layer and beneath residues);
- Quality of smelting residues and treatment testing;
- Groundwater quality;
- Surface water quality;
- Sediment quality
- Results of QA/AC program.

Interpretation of results (at both federal and provincial levels)

- Extent of soil contamination in relation to various contamination levels;
- Extent of contamination of smelting residues;
- Extent of groundwater contamination;
- Extent of surface water contamination;
- Extent of sediment contamination;
- Presentation of the conceptual model;
- Discussion of the potential impact on neighbours' water supply wells (drinking water and for agriculture);

Conclusions and recommendations

Tables

Tables should clearly indicate the exceedances in relation to the applicable criteria, guidelines and standards (for results of this field campaign and previous campaigns):

- Table compiling the results of soil analyses in comparison with the following:
 - Canadian Environmental Quality Guidelines of the Canadian Council of Ministers of the Environment (CCME) (agricultural, residential/parkland, industrial uses);
 - Canada-wide Standard (CWS) for Petroleum Hydrocarbons (PHC) in Soil (January 2008) (Tiers 1 and 2); and
 - Criteria of the Soil Protection and Contaminated Sites Rehabilitation Policy of the Quebec Department of Sustainable Development, Environment and Parks (MDDEP) (A, B, C, Schedule I to the *Regulation respecting the burial of contaminated soils*).

- Table compiling the results of groundwater analyses in comparison with the following:
 - Criteria of the MDDEP policy and appropriate alert levels;
 - Standards of Quebec's *Regulation respecting the quality of drinking water*;
 - Guidelines for Canadian Drinking Water Quality (Health Canada);
 - Canadian Water Quality Guidelines for the Protection of Agricultural Water Uses (CCME);
 - Guidance Document on Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites, Environment Canada, May 2010; and
 - Requirements of applicable municipal bylaws.

- Table compiling waste analysis results in comparison with the following:
 - Quebec *Regulation respecting hazardous materials*.

- Table compiling the results of sediment analyses in comparison with the following:
 - Soil criteria of the MDDEP Policy;
 - Canadian Sediment Quality Guidelines for the Protection of Aquatic Life (CCME); and
 - Criteria for the Assessment of Sediment Quality in Quebec and Application Frameworks: Prevention, Dredging and Remediation (Environment Canada and MDDEP).

- Table compiling the results of surface water analyses in comparison with the following:
 - Surface water quality criteria (MDDEP), November 2009, updated April 2012;
 - Canadian Water Quality Guidelines for the Protection of Aquatic Life.

The tables must clearly indicate the exceedances in relation to each criterion, guideline or standard. At a meeting, the consultant will submit the tables for approval before completing them.

Figures

The report must include a general location map and a site plan, piezometric maps for each hydrogeological unit, and plans or figures showing the locations of soil borings and

monitoring wells. The analysis results should be shown schematically (in relation to federal guideline levels and provincial criteria). Integrate data from previous studies into figures to illustrate the spread of the plume as far as can be ascertained from the information available.

The consultant must estimate the volumes of contaminated water and soil as well as the extent of groundwater, surface water and sediment contamination in relation to the different levels of contamination (both federal and provincial), and produce a scale map showing the spatial locations of these volumes. The consultant must also estimate the quantities of waste, both hazardous and non-hazardous, that are present at the site.

Produce at least two stratigraphic sections using all available information and elevations. These should show the wells, stratigraphy, depth of the rock, water level, well screening intervals, soil and water analysis results, previous results and the extent of contaminated soil and water.

Appendices – At a minimum, submit reports of soil borings and construction of monitoring wells, a photo report, data for low-flow sampling of the wells, the completed NCS sheet and analysis and quality control certificates.

2) Evaluation of rehabilitation/management options

Executive summary (in French and English)

Description of site

- History of work and summary of previous work;
- Summary of the results of the current campaign; and
- Summary of the environmental issues.

Methodology

- Description of the method used to select the options; and
- Summary of issues specific to PWGSC (which will be discussed at a meeting).

Presentation of rehabilitation and/or management options

- Scenario where PWGSC retains ownership:
 - Option 1 – Description, advantages, drawbacks, timetable, costs
 - Option 2 – Description, advantages, drawbacks, timetable, costs
- Scenario where PWGSC sells the property:
 - Option 3 – Description, advantages, drawbacks, timetable, costs
 - Option 4 – Description, advantages, drawbacks, timetable, costs

Discussion and selection of preferred option

Conclusions and recommendations

Daily reports

Submit daily progress reports to the PWGSC representative no later than the next morning. Daily reports must include the following:

- the number of hours spent in the field by the consultant's and the subcontractors' personnel;
- a summary of the work done during the day and any findings of interest;
- a summary of occupational health and safety meetings and of topics discussed or relevant to occupational health and safety; and
- an overview of the work planned for the next two days.

Presentations

Presentations must be prepared using the template provided by PWGSC.

Reproduction of reports

Preliminary reports must be submitted in electronic format (pdf). Two preliminary reports will be produced and two sets of comments will be generated. Four copies of the final version of the report, including PWGSC's comments, must be submitted two weeks after the comments are received. Four compact disks, each containing a copy of the final report in electronic format (pdf) along with text, tables, figures, the NCS sheet, presentations and photographs in native format (Microsoft 2003, Excel, CAD, PowerPoint and jpg), must be submitted with the paper copies. The reports must be written in French and printed on both sides of the paper. All of the consultant's drawings must be computer-aided drawings (CAD). All photographs and figures in the reports must be in colour.

8.0 TIMETABLE

The fieldwork must be completed by November 30, 2012. The preliminary electronic report must be submitted by January 16, 2013. The final report must be submitted within two weeks after the receipt of PWGSC's comments.

9.0 CONFIDENTIALITY OF INFORMATION

Any information received and documents produced in connection with this mandate remain the sole property of PWGSC. The consultant may not disclose, reproduce or make reference to any documents consulted or produced in connection with this mandate without the explicit prior written consent of PWGSC. This measure applies to all document formats, including electronic versions. PWGSC reserves the right to use the documents produced by the consultant as it sees fit.

All materials (maps, photographs, plans, etc.) received under this mandate remain the property of PWGSC and must be submitted with the final report.

APPENDIX A

NB: The following tables must be used. Any fees incurred to meet the requirements of this mandate but not specifically covered by an item in the proposal must be divided proportionally among each of the items in the proposal.

APPENDIX A1: Personnel (Management, Preparation for Fieldwork and Report)*

Description of Position	Hourly Rate	Number of Hours	Total
Project Authority (expert)			
Project Manager (10 years' experience)			
Hydrogeologist			
Fieldwork Manager (5 years' experience)			
Fieldwork Assistant (engineer or technician)			
Secretary			
Draughtsperson			
Other (specify)			
Total to be carried to APPENDIX A			\$

***The budget provides a lump-sum for fees (management, preparation for fieldwork, interpretation and report) for RS-1 & RS-2 work (section 3.1). This amount must cover all fees associated with the performance of the work.**

APPENDIX AIII: Expenses – Fieldwork and Other Work*

Description	Unit or Lump-Sum Price	Quantity	Total
Travel		1	
Backhoe (set-up/dismantling)		1	
Exploratory trenches in metres Continuous sampling		160 metres**	
Drill (set-up/dismantling)		1	
Borehole drilling (backfilling/unconsolidated deposits) in metres, including cleaning. Continuous sampling		160 metres**	
Monitoring wells Including driller time for installation		110 metres**	
Field and sampling equipment for development, for permeability testing etc.		1	
Water treatment/Transport and disposal of pumped water		1	
Surveying		1	
Treatment testing		5**	
Examination of waste samples (including grain-size analysis/sedimentation analysis)		10**	
Total			

***Costs will be reimbursed on the basis of work actually done at the unit rates shown in Table AIII. Public Works and Government Services Canada will pay only for expenses actually incurred.**

****Estimated quantity for the purposes of submission. This quantity will be adjusted following approval of the characterization plan by the departmental representative and based on actual field conditions.**

APPENDIX AIV: Shipping of Samples to Laboratory and Analysis

Description of Soil and Sediment Analyses	Unit Price	Estimated Quantities	Total (\$)
Metals (Ag, As, Ba, Cd, B, Cr, Cu, Sn, Mn, Mo, Ni, Pb, Se and Zn)		60	
Mercury		60	
Polycyclic aromatic hydrocarbons (PAHs)		35	
Petroleum hydrocarbons C ₁₀ -C ₅₀		35	
Petroleum hydrocarbon fractions F ₁ -F ₄		8	
Volatile organic compounds (VOCs)		25	
Chlorobenzenes		8	
PCBs (congeners)		10	
pH		10	
Dioxins and furans		2	
Total			

Description of Groundwater Analyses	Unit Price	Estimated Quantities	Total (\$)
Metals (Ag, Al, As, Ba, Be, B, Cd, Cr, Co, Cu, Fe, Sb, Se, Sn, Mn, Mo, Na, Ni, Pb and Zn)		18	
Mercury		18	
Polycyclic aromatic hydrocarbons (PAHs)		16	
Petroleum hydrocarbons C ₁₀ -C ₅₀		16	
Petroleum hydrocarbon fractions F ₁ and F ₂		5	
Phenolic compounds		3	
Volatile organic compounds		5	
2,4 dinitrotoluene & nitrobenzene		3	
Bromide		18	
Cyanides		18	
Fluorides		18	
Sulphides		18	
Chlorides		18	
Dioxins and furans		3	
Phthalates		5	
PCBs (congeners)		5	
pH		18	
Hardness		18	
Total			

Description of Surface Water Analyses	Unit Price	Estimated Quantities	Total (\$)
Metals (Ag, Al, As, B, Cd, Cr _{hexavalent} , Cr _{trivalent} , Cu, Fe, Mo, Ni, Pb and Zn)		6	
Mercury		6	
Polycyclic aromatic hydrocarbons (PAHs)		6	
Petroleum hydrocarbons C ₁₀ -C ₅₀		6	
Volatile organic compounds (VOCs)		6	
Cyanides		6	
Fluorides		6	
Sulphides		6	
Dioxins and furans		2	
pH		6	
Hardness		6	
Total			

Description of Waste Analyses	Unit Price	Estimated Quantities	Total (\$)
Metals (including leachate according to the HMR)		10	
Total oil and grease		5	
Total			

APPENDIX AV: Hourly rate evaluation for the next parts of the mandate*

Description of Position	Hourly Rate	Number of Hours**	Total
Project Authority (expert)		20	
Project Manager (10 years' experience)		90	
Hydrogeologist		20	
Engineer (10 years' experience)		90	
Fieldwork Manager (5 years' experience)		200	
Fieldwork Assistant (engineer or technician)		20	
Secretary		15	
Draughtsperson		60	
Total to be carried to APPENDIX A			\$

* Please note that the hourly rates shown in Appendix AV and the total amount will be used for bid evaluation. The hourly rates presented here will be used if PWGSC choose to conduct RS-3 to RS-6 work (section 3.2).

** Estimated quantities for the purposes of submission.

Summary

First mandate RS-1 & RS-2

APPENDIX AI – Personnel (Manag., Prep. for Fieldwork and Report)	\$ _____
APPENDIX AII – Site Personnel	\$ _____
APPENDIX AIII – Expenses – Fieldwork and Other Work	\$ _____
APPENDIX AIV – Analyses	\$ _____

Potential subsequent mandate (RS-3 to SR6)

APPENDIX AV – Hourly rates	\$ _____
Total AI to AV	\$ _____

APPENDIX B – Site Plan

