

**RETURN BIDS TO:**  
**RETOURNER LES SOUMISSIONS À:**

## Bid Receiving - PWGSC / Réception des soumissions - TPSGC

**11 LaurierSt./ 11, rue Laurier**  
**Place du Portage, Phase III**  
**Core 0B2 / Noyau 0B2**  
**Gatineau**

**Québec  
K1A 0S5  
Bid Fax: (819) 997-9776**

## Request For a Standing Offer Demande d'offre à commandes

### Regional Individual Standing Offer (RISO)

### Offre à commandes individuelle régionale (OCIR)

Canada, as represented by the Minister of Public Works and Government Services Canada, hereby requests a Standing Offer on behalf of the Identified Users herein.

Le Canada, représenté par le ministre des Travaux Publics et Services Gouvernementaux Canada, autorise par la présente, une offre à commandes au nom des utilisateurs identifiés énumérés ci-après.

## Comments - Commentaires

This document contains a security requirement.

Ce document contient une condition de sécurité.

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

**Issuing Office - Bureau de distribution**

Maintenance & Professional Consulting Services Division  
(FK)

11 Laurier St./ 11, rue Laurier  
3C2, Place du Portage, Phase III  
Gatineau  
Québec  
K1A 0S5

<b>Title - Sujet</b> Designated Substance and Hazardous	
<b>Solicitation No. - N° de l'invitation</b> EP914-161372/B	<b>Date</b> 2016-08-17
<b>Client Reference No. - N° de référence du client</b> 20161372	<b>GETS Ref. No. - N° de réf. de SEAG</b> PW-\$\$FK-289-71415
<b>File No. - N° de dossier</b> fk289.EP914-161372	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2016-09-12</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Eastern Daylight Saving Time EDT
<b>Delivery Required - Livraison exigée</b> See Herein	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Maquilting(fk div), Amalia O.	<b>Buyer Id - Id de l'acheteur</b> fk289
<b>Telephone No. - N° de téléphone</b> (873)469-4886 ( )	<b>FAX No. - N° de FAX</b> (819)956-3600
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> DEPARTMENT OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA 2720 RIVERSIDE DR. NCA (OTTAWA) SIR CHARLES TUPPER BUILDING Ottawa Ontario K1A0S5 Canada	
<b>Security - Sécurité</b> This request for a Standing Offer does not include provisions for security. Cette Demande d'offre à commandes ne comprend pas des dispositions en matière de sécurité.	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

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

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**IMPORTANT NOTICE TO OFFERORS**

**Security**

This notice is to advise ALL interested offerors that in order to be awarded a standing offer which contains a security requirement, all offerors MUST hold a valid Security Clearance granted or approved by PWGSC Canadian Industrial Security Directorate (CISD) at the level indicated in this solicitation document. Should the offeror not currently hold a valid Security Clearance or require the level to be upgraded, PWGSC will sponsor the offeror. Please submit your written request with the following information to Amalia Maquiling by facsimile 819-956-3600 or by e-mail to [amalia.maquiling@tpsgc-pwgsc.gc.ca](mailto:amalia.maquiling@tpsgc-pwgsc.gc.ca).

- Legal Company Name
- Mailing address
- Surname and given name of contact person
- Telephone number of contact person
- Title of contact person
- Facsimile number
- E-mail address of contact person
- Procurement Business Number
- Preferred Language of correspondence
- Level of Security Required

Additional information on PWGSC security can be found on the following website:  
<http://ssi-iss.tpsgc-pwgsc.gc.ca> or by dialing 1-866-368-4646 (Toll free).

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**PART 1 - GENERAL INFORMATION**

**1.1 Introduction**

The Request for Standing Offers (RFSO) is divided into seven parts plus attachments and annexes, as follows:

- |        |   |
|--------|---|
| Part 1 | General Information: provides a general description of the requirement;   |
| Part 2 | Offeror Instructions: provides the instructions applicable to the clauses and conditions of the RFSO;   |
| Part 3 | Offer Preparation Instructions: provides Offerors with instructions on how to prepare their offer to address the evaluation criteria specified;   |
| Part 4 | Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria which must be addressed in the offer, if applicable, and the basis of selection;  |
| Part 5 | Certifications: includes the certifications to be provided;   |
| Part 6 | Security, Financial and Insurance Requirements: includes specific requirements that must be addressed by Offerors; and  |
| Part 7 | 7A, Standing Offer, and 7B, Resulting Contract Clauses:<br><br>7A, includes the Standing Offer containing the offer from the Offeror and the applicable clauses and conditions;<br><br>7B, includes the clauses and conditions which will apply to any contract resulting from a call-up made pursuant to the Standing Offer. |

The Annexes include the Statement of Work, the Financial Offer, the Security Requirements Checklist, Form to provide Complete List of names of all individuals who are currently directors of the Offeror and Quarterly Usage Report Form.

**1.2 Summary**

**1.2.1** This is a solicitation to request Standing Offers (SO). A SO is not a contract and does not commit PWGSC to procure or contract for any services. Any resulting SO constitutes an Offer made by an Offeror for the provision of certain Services to Canada at prearranged prices or a prearranged pricing basis, under set terms and conditions, that is open for acceptance by Identified User on behalf of Canada during a specified period of time.

A separate contract is formed each time a call-up for the provision of Services is made against a SO. Canada's liability will be limited to the actual value of the call-ups made by the duly authorized Identified User within the period specified in the call-up.

**1.2.2 Requirement:** Public Works and Government Services Canada (PWGSC) invites interested Offerors to respond to this Request for Standing Offer (RFSO) to provide rapid response services for anticipated designated substances and hazardous materials (DSHM) removal or repair including Type 1, Type 2 (including glove bag) and Type 3 asbestos work operations; Type 1, Type 2, and Type 3A lead removal operations; and Level 1, Level 2 and Level 3 mould and bat and bird dropping removal as well as

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Type 1 and Type 2 silica work operations for various buildings in the National Capital Area (NCA), in accordance with the Statement of Work, Annex A.

### 1.2.3 Response Time

The Contractor is required to respond to individual call-ups (as determined at the time of each individual call-up) according to the following:

**1.2.3.1 Emergency Response:** refers to a request for services called-up against the Standing Offer where there is a stated high risk to human health and safety or significant damage to a building likely to occur if rapid response and corrective action are not undertaken within 4 hour time frame, 24 hours, 7 days a week including holidays.

**1.2.3.2 Rapid Response:** PWGSC understands the term rapid response to meaning within 24 hours the SO holder would respond to a call-up request made against the Standing Offer. In this case the response would be the provision of cost estimates, and a schedule of work to be implemented in the shortest possible time within a 24 hour time frame, including weekends and holidays.

**1.2.4** This RFSO will result in one (1) Regional Individual Standing Offer (RISO) valid for five (5) years.

**1.2.5** The requirement is subject to the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), the North American Free Trade Agreement (NAFTA), and the Agreement on Internal Trade (AIT).

### 1.3 Security Requirement

There is a security requirement associated with the requirement of the Standing Offer. For additional information, see Part 6 - Security, Financial and Insurance Requirements, and Part 7 - Standing Offer and Resulting Contract Clauses. For more information on personnel and organization security screening or security clauses, Offerors should refer to the **Industrial Security Program (ISP)** of Public Works and Government Services Canada (<http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html>) website.

### 1.4 Debriefings

Offerors may request a debriefing on the results of the request for standing offers process. Offerors should make the request to the Standing Offer Authority within 15 working days of receipt of the results of the request for standing offers process. The debriefing may be in writing, by telephone or in person.

## **PART 2 - OFFEROR INSTRUCTIONS**

### **2.1 Standard Instructions, Clauses and Conditions**

All instructions, clauses and conditions identified in the Request for Standing Offers (RFSO) 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.

Offerors who submit an offer agree to be bound by the instructions, clauses and conditions of the RFSO and accept the clauses and conditions of the Standing Offer and resulting contract(s).

The 2006 (2016-04-04) Standard Instructions - Request for Standing Offers - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the RFSO.

- The text under Subsection 5.4 of 2006, Standard Instructions - Request for Standing Offers - Goods or Services - Competitive Requirements, is amended as follows:

Delete: sixty (60) days

Insert: One Hundred and Eighty (180) days

### **2.2 Submission of Offers**

Offers 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 Request for Standing Offers.

Due to the nature of the solicitation, transmission of offers by facsimile to Public Works and Government Services Canada is not considered to be practical and therefore will not be accepted.

### **2.3 Former Public Servant**

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 awarded to FPS, offerors must provide the information required below before the issuance of a standing offer. If the answer to the questions and, as applicable the information required have not been received by the time the evaluation of offers is completed, Canada will inform the Offeror of a time frame within which to provide the information. Failure to comply with Canada's request and meet the requirement within the prescribed time frame will render the offer non-responsive.

#### **2.3.1 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

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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, 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.

### 2.3.2 Former Public Servant in Receipt of a Pension

As per the above definitions, is the Offeror a FPS in receipt of a pension? **YES ( ) NO ( )**

If so, the Offeror must provide the following information, for all FPS in receipt of a pension, as applicable:

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

By providing this information, Offerors agree that the successful Offeror's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with Contracting Policy Notice: 2012-2 and the Guidelines on the Proactive Disclosure of Contracts.

### 2.3.3 Work Force Adjustment Directive

Is the Offeror a FPS who received a lump sum payment pursuant to the terms of the Work Force Adjustment Directive? **YES ( ) NO ( )**

If so, the Offeror 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 adjustment 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 Applicable Taxes.

## 2.4 Enquiries - Request for Standing Offers

All enquiries must be submitted in writing to the Standing Offer Authority no later than ten (10) calendar days before the Request for Standing Offers (RFSO) closing date. Enquiries received after that time may not be answered.



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Offerors should reference as accurately as possible the numbered item of the RFSO to which the enquiry relates. Care should be taken by offerors 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 offerors do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all offerors. Enquiries not submitted in a form that can be distributed to all offerors may not be answered by Canada.

## **2.5 Applicable Laws**

The Standing Offer and any contract resulting from the Standing Offer must be interpreted and governed, and the relations between the parties determined, by the laws in force in the province or territory where the work is performed.

Offerors may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their offer, 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 offerors.

### PART 3 - OFFER PREPARATION INSTRUCTIONS

#### 3.1 Offer Preparation Instructions

Canada requests that offerors provide their offer in separately bound sections as follows:

Section I: Technical Offer (1 hard copy)

Section II: Financial Offer (1 hard copy)

Section III: Certifications (1 hard copy)

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

Canada requests that Offerors follow the format instructions described below in the preparation of their offer.

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to that of the Request for Standing Offers.

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, Offerors 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 Offer

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

Section II: Financial Offer

Offerors must submit their financial offer in accordance with Annex B1 and B2 – Financial Offer – Basis of Payment. The total amount of Applicable Taxes must be shown separately.

Section III: Certifications

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

## **PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION**

### **4.1 Evaluation Procedures**

Offers will be assessed in accordance with the entire requirement of the Request for Standing Offer including the technical and financial evaluation criteria.

#### **4.1.1 Technical Evaluation**

##### **Submission of Evidence**

Submission of Evidence as described at **4.1.1.1 to 4.1.1.3** must be included with the Offeror's offer at time of solicitation closing. Failure by the Offeror to provide the required evidence will result in the offer being disqualified and no further consideration will be given to the Offeror and the offer will be deemed non responsive.

The evidence provided by the Offeror may be verified. PWGSC reserves the right to verify information for completeness and accuracy and to confirm reference satisfaction with services provided. In the event where any of the information cannot be confirmed by the client contacts named in the offer, the offer will be considered non-responsive and no further consideration will be given to the Offeror.

##### **Mandatory Technical Criteria**

Each offer will be reviewed for compliance with the Mandatory Technical Criteria. Offers that do not meet the mandatory requirements will be deemed non-responsive and will be given no further consideration.

##### **4.1.1.1 Accidents or Incidents**

Offerors must disclose below the number of occupational accident(s) or environmental incident(s) involving the transportation and disposal of all asbestos, lead, mould, and bat and bird droppings removal operations and/or silica contaminated wastes that occurred from January 2012 up to solicitation closing date **AND** that resulted in a **regulatory violation** against the Offeror.

Disclosure of past occupational accidents or environmental incidents taking place  
from January 2012 up to solicitation closing date: \_\_\_\_\_ # of accidents/incidents

**Offerors having four (4) or more accidents or incidents that occurred from January 2012 up to solicitation closing date and that resulted in a regulatory violation will be considered non-responsive and no further consideration will be given.**

##### **4.1.1.2 Mandatory Company Experience and Past Performance**

The Offeror must provide evidence of its experience and past performance by referencing one (1) project each, completed or ongoing for Type 1, Type 2, Level 1 and Level 2 and two (2) projects for Type 3 and Level 3 within the **past seven (7) years** with at least one (1) project in a Federal Government environment for Projects involving asbestos, lead, mould and bat and bird dropping removal operations and silica work operations identified at 4.1.1.2.1 to 4.1.1.2.10. **The Offeror must complete the following tables in order to demonstrate that they have the required experience. Failure to complete the tables below with the required information will render the offer non-responsive.**

**The experience must be acquired from January 2009 to solicitation closing date.**

##### **4.1.1.2.1 PROJECT REFERENCE NO. 1 - TYPE 1 AND TYPE 2 ASBESTOS WORK OPERATIONS**

Name of client organization or client Company	Name: _____
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Name and title of client contact who can confirm the information presented in the proposal	Name: _____ Title: _____
Telephone and e-mail address of client contact	Phone Number: _____ E-mail: _____
Performance period of the project ( <i>indicate year, month, day</i> )	Start date: _____ (year/month/day) Completion date: _____ (year/month/day)
Scope of service(s) rendered ( <i>use additional sheet (s) if space provided is not enough</i> )	_____ _____ _____ _____ _____ _____

**4.1.1.2.2 PROJECT REFERENCE NO. 1 - TYPE 3 ASBESTOS WORK OPERATIONS**

Name of client organization or Company	Name: _____
Name and title of client contact who can confirm the information presented in the proposal	Name: _____ Title: _____
Telephone and e-mail address of client contact	Phone Number: _____ E-mail: _____
Performance period of the project ( <i>indicate year, month, day</i> )	Start date: _____ (year/month/day) Completion date: _____ (year/month/day)
Scope of service(s) rendered ( <i>use additional sheet (s) if space provided is not enough</i> )	_____ _____ _____ _____ _____ _____

**4.1.1.2.3 PROJECT REFERENCE NO. 2 - TYPE 3 ASBESTOS WORK OPERATIONS**

Name of client organization or Company	Name: _____
Name and title of client contact who can confirm the information presented in the proposal	Name: _____

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	Title: _____
Telephone and e-mail address of client contact	Phone Number: _____ E-mail: _____
Performance period of the project ( <i>indicate year, month, day</i> )	Start date: _____ (year/month/day) Completion date: _____ (year/month/day)
Scope of service(s) rendered ( <i>use additional sheet (s) if space provided is not enough</i> )	_____ _____ _____ _____ _____ _____

**4.1.1.2.4 PROJECT REFERENCE NO. 1 - TYPE 1 AND 2 LEAD REMOVAL OPERATIONS**

Name of client organization or Company	Name: _____
Name and title of client contact who can confirm the information presented in the proposal	Name: _____ Title: _____
Telephone and e-mail address of client contact	Phone Number: _____ E-mail: _____
Performance period of the project ( <i>indicate year, month, day</i> )	Start date: _____ (year/month/day) Completion date: _____ (year/month/day)
Scope of service(s) rendered ( <i>use additional sheet (s) if space provided is not enough</i> )	_____ _____ _____ _____ _____ _____

**4.1.1.2.5 PROJECT REFERENCE NO. 1 - TYPE 3A LEAD REMOVAL OPERATIONS**

Name of client organization or Company	Name: _____
Name and title of client contact who can confirm the information presented in the proposal	Name: _____ Title: _____
Telephone and e-mail address of client contact	Phone Number: _____

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	E-mail: _____
Performance period of the project (indicate year, month, day)	Start date: _____ (year/month/day)
	Completion date: _____ (year/month/day)
Scope of service(s) rendered (use additional sheet (s) if space provided is not enough)	_____ _____ _____ _____ _____ _____

**4.1.1.2.6 PROJECT REFERENCE NO. 2 - TYPE 3A LEAD REMOVAL OPERATIONS**

Name of client organization or Company	Name: _____
Name and title of client contact who can confirm the information presented in the proposal	Name: _____ Title: _____
Telephone and e-mail address of client contact	Phone Number: _____ E-mail: _____
Performance period of the project (indicate year, month, day)	Start date: _____ (year/month/day)
	Completion date: _____ (year/month/day)
Scope of service(s) rendered (use additional sheet (s) if space provided is not enough)	_____ _____ _____ _____ _____ _____

**4.1.1.2.7 PROJECT REFERENCE NO. 1 - LEVEL 1 AND 2 MOULD AND BAT AND BIRD DROPPINGS REMOVAL OPERATIONS**

Name of client organization or Company	Name: _____
Name and title of client contact who can confirm the information presented in the proposal	Name: _____ Title: _____
Telephone and e-mail address of client contact	Phone Number: _____ E-mail: _____

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Performance period of the project ( <i>indicate year, month, day</i> )	Start date: _____ (year/month/day)
Scope of service(s) rendered ( <i>use additional sheet (s) if space provided is not enough</i> )	Completion date: _____ (year/month/day)
	_____
	_____
	_____
	_____
	_____

**4.1.1.2.8 PROJECT REFERENCE NO. 1 - LEVEL 3 MOULD AND BAT AND BIRD DROPPINGS REMOVAL OPERATIONS**

Name of client organization or Company	Name: _____
Name and title of client contact who can confirm the information presented in the proposal	Name: _____ Title: _____
Telephone and e-mail address of client contact	Phone Number: _____ E-mail: _____
Performance period of the project ( <i>indicate year, month, day</i> )	Start date: _____ (year/month/day)
Scope of service(s) rendered ( <i>use additional sheet (s) if space provided is not enough</i> )	Completion date: _____ (year/month/day)
	_____
	_____
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	_____
	_____

**4.1.1.2.9 PROJECT REFERENCE NO. 2 - LEVEL 3 MOULD AND BAT AND BIRD DROPPINGS REMOVAL OPERATIONS**

Name of client organization or Company	Name: _____
Name and title of client contact who can confirm the information presented in the proposal	Name: _____ Title: _____
Telephone and e-mail address of client contact	Phone Number: _____ E-mail: _____
Performance period of the project ( <i>indicate year, month, day</i> )	Start date: _____

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	<div style="text-align: right;">_____ (year/month/day)</div> <div>Completion date: _____ (year/month/day)</div>
Scope of service(s) rendered <i>(use additional sheet (s) if space provided is not enough)</i>	<div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div>

**4.1.1.2.10 PROJECT REFERENCE NO. 1 - TYPE 1 AND 2 SILICA WORK OPERATIONS**

Name of client organization or Company	Name: _____
Name and title of client contact who can confirm the information presented in the proposal	Name: _____
	Title: _____
Telephone and e-mail address of client contact	Phone Number: _____
	E-mail: _____
Performance period of the project <i>(indicate year, month, day)</i>	Start date: _____ (year/month/day)
	Completion date: _____ (year/month/day)
Scope of service(s) rendered <i>(use additional sheet (s) if space provided is not enough)</i>	<div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div> <div style="border-bottom: 1px solid black; height: 15px; margin-bottom: 2px;"></div>

**4.1.1.3 Categories of Service and Proposed Personnel.**

To carry out the work on this requirement, the contractor must have a **minimum resource of four (4) Labourers, two (2) Site Supervisors and one (1) Senior Resource**. An individual may be proposed for more than one (1) category of services, but the Offeror must ensure that the category of services and person performing it is appropriately identified when responding to a call-up and submitting the invoice.

Labourers	Site Supervisor	Senior Resource



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#### **4.1.1.4 Additional requirements**

Valid copies of the following training, certifications, licenses and permits identified below should be submitted with the offer. However, if the following is not submitted with the offer by the solicitation closing date, the Standing Offer Authority will so inform the Offeror and provide the Offeror with a time frame within which to meet the requirement. Failure to comply with the request of the Standing Offer Authority and meet the requirement within that time period will render the bid non-responsive.

##### **4.1.1.4.1 For Individuals**

The Offeror must provide proof of Training / Certifications for Type 1, Type 2 and Type 3 asbestos work operations; Type 1, Type 2 and Type 3A lead removal operations; Level 1, Level 2 and Level 3 mould and bat and bird dropping removal operations; and Type 1 and Type 2 silica work operations **for ALL proposed Labourers and Site Supervisors**. Further, the Offeror must demonstrate that Labourers and Site Supervisor listed above has received the following training by submitting valid copies of their training certificate:

- 1) Hazardous Material Worker (253H) Certificate
- 2) Proof of quantitative Respirator Fit-test
- 3) Proof of ALL additional related Training / Certifications, such as Fall Arrest Training, Confined Spaces Training.
- 4) Workplace Hazardous Materials Information Systems (WHMIS)
- 5) Site Supervisor – Qualifications must include the Asbestos Abatement Supervisor (253S) certificate.

##### **4.1.1.4.2 For Organization**

- 1) The contractor must demonstrate that the receiver facility(ies) intended to accept asbestos and other designated and hazardous material waste as indicated in 1.2.2 and are duly licensed/approved by the authority having jurisdiction by submitting a valid copy of its license.
- 2) RBQ licenses 2.7 and/or 7 (Québec)
- 3) Proof of applicable certifications or permits required by provincial and/or federal authorities to transport asbestos contaminated waste.

#### **4.1.2 Financial Evaluation**

Offerors must complete and submit a Financial Offer attached at Annex B1 and B2 in response to this RFSO. Upon completion of the technical evaluation, financial offers of all responsive offers will be evaluated.

#### **4.2 Basis of Selection**

An offer must comply with the requirements of the Request for Standing Offers and meet all mandatory technical evaluation criteria to be declared responsive. The responsive offer with the lowest evaluated price will be recommended for issuance of a standing offer.

## **PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION**

Offerors must provide the required certifications and additional information to be issued a standing offer.

The certifications provided by Offerors to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare an offer non-responsive, will have the right to set-aside a standing offer, or will declare a contractor in default if any certification made by the Offeror is found to be untrue whether made knowingly or unknowingly during the offer evaluation period, during the Standing Offer period, or during the contract period.

The Standing Offer Authority will have the right to ask for additional information to verify the Offeror's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Standing Offer Authority will render the offer non-responsive, result in the setting aside of the Standing Offer or constitute a default under the Contract.

### **5.1 Certifications Required with the Offer**

Offerors must submit the following duly completed certifications as part of their offer.

#### **5.1.1 Integrity Provisions - Declaration of Convicted Offences**

In accordance with the [Ineligibility and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Offeror must provide with its offer the required documentation, as applicable, to be given further consideration in the procurement process.

### **5.2 Certifications Precedent to the Issuance of a Standing Offer and Additional Information**

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

#### **5.2.1 Integrity Provisions – Required Documentation**

In accordance with the [Ineligibility and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Offeror must provide the required documentation, as applicable, to be given further consideration in the procurement process.

#### **5.2.2 Federal Contractors Program for Employment Equity - Standing Offer Certification**

By submitting an offer, the Offeror certifies that the Offeror, and any of the Offeror's members if the Offeror is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list ) available at the bottom of the page of the [Employment and Social Development Canada-Labour's](http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page?&_ga=1.229006812.1158694905.1413548969) website ([http://www.esdc.gc.ca/en/jobs/workplace/human\\_rights/employment\\_equity/federal\\_contractor\\_program.page?&\\_ga=1.229006812.1158694905.1413548969](http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page?&_ga=1.229006812.1158694905.1413548969)).

Canada will have the right to declare an offer non-responsive, or to set-aside a Standing Offer, if the Offeror, or any member of the Offeror if the Offeror is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list at the time of issuing of a Standing Offer or during the period of the Standing Offer.

## **5.2.3 Additional Certifications Precedent to Issuance of a Standing Offer**

### **5.2.3.1 Status and Availability of Resources**

The Offeror certifies that, should it be issued a standing offer as a result of the Request for Standing Offer, every individual proposed in its offer will be available to perform the Work resulting from a call-up against the Standing Offer as required by Canada's representatives and at the time specified in a call-up or agreed to with Canada's representatives. If for reasons beyond its control, the Offeror is unable to provide the services of an individual named in its offer, the Offeror may propose a substitute with similar qualifications and experience. The Offeror must advise the Standing Offer 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 Offeror: death, sickness, maternity and parental leave, retirement, resignation, dismissal for cause or termination of an agreement for default.

If the Offeror has proposed any individual who is not an employee of the Offeror, the Offeror 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 Offeror must, upon request from the Standing Offer Authority, provide a written confirmation, signed by the individual, of the permission given to the Offeror and of his/her availability.

## **PART 6 – SECURITY REQUIREMENTS**

### **6.1 Security Requirement**

6.1.1 Before issuance of a standing offer, the following conditions must be met:

- (a) the Offeror must hold a valid organization security clearance as indicated in Part 7A - Standing Offer;
- (b) the Offeror's proposed individuals requiring access to classified or protected information, assets or sensitive work site(s) must meet the security requirement as indicated in Part 7A - Standing Offer;
- (c) the Offeror must provide the name of all individuals who will require access to classified or protected information, assets or sensitive work sites.

6.1.2 Offerors are reminded to obtain the required security clearance promptly. Any delay in the issuance of a standing offer to allow the successful offeror to obtain the required clearance will be at the entire discretion of the Standing Offer Authority.

6.1.3 For additional information on security requirements, offerors should refer to the Canadian Industrial Security Directorate (CISD), Industrial Security Program (<http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html>) website.

### **6.2 Employee Information for Security**

The Offeror should specify the following information regarding employees proposed in Part 4, Technical Evaluation) to provide services against any resulting contract. Add rows for additional personnel.

	<b>LEGAL NAME (First and Last) (Please Print)</b>	<b>DATE OF BIRTH (Day/Month/Year)</b>	<b>CURRENT CLEARANCE HELD</b>
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

## **PART 7 - STANDING OFFER AND RESULTING CONTRACT CLAUSES**

### **7A STANDING OFFER**

#### **7A.1 Offer**

**7A.1.1** The Offeror offers to fulfill the requirement in accordance with the Statement of Work at Annex A.

#### **7A.2 Security Requirement**

**7A.2.1** The following security requirement (SRCL and related clauses) applies and form part of the Standing Offer.

1. The Contractor/Offeror must, at all times during the performance of the Standing Offer, hold a valid Facility Security Clearance at the level of **SECRET**, issued by the Canadian Industrial Security Directorate (CISD), Public Works and Government Services Canada (PWGSC).
2. The Contractor/Offeror personnel requiring access to sensitive work site(s) must EACH hold a valid personnel security screening at the level of **SECRET**, granted or approved by CISD/PWGSC.
3. Subcontracts which contain security requirements are NOT to be awarded without the prior written permission of CISD/PWGSC.
4. The Contractor/Offeror must comply with the provisions of the:
  - (a) Security Requirements Check List and security guide (if applicable), attached at Annex C;
  - (b) *Industrial Security Manual* (Latest Edition).

#### **7A.3 Standard Clauses and Conditions**

All clauses and conditions identified in the Standing Offer and resulting contract(s) 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.

##### **7A.3.1 General Conditions**

2005 (2016-04-04) General Conditions - Standing Offers - Goods or Services apply to and form part of this Standing Offer.

##### **7A.3.2 Standing Offer Reporting**

The Offeror must compile and maintain records on its provision of goods, services or both to the federal government under contracts resulting from the Standing Offer. This data must include all purchases, including those paid for by a Government of Canada Acquisition Card.

The Offeror must provide this data in accordance with the reporting requirements detailed in Annex E. If some data is not available, the reason must be indicated. If no goods or services are provided during a given period, the Offeror must still provide a "nil" report.

The data must be submitted on a "quarterly basis" to the Standing Offer Authority.

The quarterly reporting periods are defined as follows: *(to be revised prior to issuance of Standing Offer)*

1st quarter: April 1 to June 30;

2nd quarter: July 1 to September 30;

3rd quarter: October 1 to December 31;

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4th quarter: January 1 to March 31.

The data must be submitted to the Standing Offer Authority no later than 15 calendar days after the end of the reporting period.

#### **7A.4 Term of Standing Offer**

##### **7A.4.1 Period of Standing Offer**

The period for making call-ups and providing services against the Standing Offer is from \_\_\_\_\_ to \_\_\_\_\_ inclusive.

#### **7A.5 Authorities**

##### **7A.5.1 Standing Offer Authority**

The Standing Offer Authority is:

Name: Amalia Maquiling  
Title: Supply Team Leader  
Organization: Facility Maintenance Services Division  
Public Works and Government Services Canada  
Address: Place du Portage, Phase III, 3C2  
11 Laurier Street, Gatineau, Quebec K1A 0S5  
Telephone: 873-469-4886  
Facsimile: 819-956-3600  
E-mail address: [amalia.maquiling@tpsgc-pwgsc.gc.ca](mailto:amalia.maquiling@tpsgc-pwgsc.gc.ca)

The Standing Offer Authority is responsible for the establishment of the Standing Offer, its administration and its revision, if applicable. Upon the making of a call-up, as Contracting Authority, he is responsible for any contractual issues relating to individual call-ups made against the Standing Offer by any Identified User.

##### **7A.5.2 Technical Authority**

The Technical Authority for the Standing Offer is:

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Organization: \_\_\_\_\_  
Telephone: \_\_\_\_\_  
Facsimile: \_\_\_\_\_  
E-mail: \_\_\_\_\_

The Technical Authority is the representative of the department or agency for whom the Work will be carried out pursuant to a call-up under the Standing Offer and is responsible for all the technical content of the Work under the resulting Contract.

##### **7A.5.3 Offeror's Representative**

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Organization: \_\_\_\_\_  
Telephone: \_\_\_\_\_  
Facsimile: \_\_\_\_\_  
E-mail: \_\_\_\_\_

## **7A.6 Proactive Disclosure of Contracts with Former Public Servants**

### **7A.7 Identified Users**

The Identified User authority to make call-ups against the Standing Offer is the Professional and Technical Services (PTS), Real Property Branch, Public Works and Government Services Canada (PWGSC).

### **7A.8 Call-up Procedures**

The PWGSC Technical Authority will establish the Scope of Services to be performed under each individual Call-up based on the pre-established rates identified in the Basis of Payment.

### **7A.9 Call-up Instrument**

The Work will be authorized or confirmed by the Identified User(s) using form *PWGSC-TPSGC 942 "Call-up Against a Standing Offer"* or other acceptable *"Call-up Against a Standing Offer"* electronic document.

### **7A.10 Limitation of Call-ups**

Individual call-ups against this Standing Offer must not exceed \$40,000.00 (Applicable Taxes included).

### **7A.11 Priority of Documents**

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

1. the call up against the Standing Offer, including any annexes;
2. the articles of the Standing Offer;
3. the General Conditions 2005 (2016-04-04), General Conditions -Standing Offers - Goods or Services;
4. the General Conditions 2035 (2016-04-04), General Conditions - Higher Complexity - Services
5. Annex A - Statement of Work;
6. Annex B - Financial Offer;
7. Annex C - Security Requirements Check List
8. the Offeror's offer \_\_\_\_\_ (*insert date of offer*),

### **7A.12 Certifications and Additional Information**

#### **7A.12.1 Compliance**

Unless specified otherwise, the continuous compliance with the certifications provided by the Offeror with its offer or precedent to issuance of the Standing Offer (SO), and the ongoing cooperation in providing additional information are conditions of issuance of the SO and failure to comply will constitute the Offeror in default. Certifications are subject to verification by Canada during the entire period of the SO and of any resulting contract that would continue beyond the period of the SO.

#### **7A.12.2 SACC Manual Clauses**

M3020C (2016-01-28) Status and Availability of Resources

If for reasons beyond its control, the Offeror is unable to provide the services of an individual named in its offer, the Offeror may propose a substitute with similar qualifications and experience. The Offeror must advise the Standing Offer 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

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will be considered as beyond the control of the Offeror: death, sickness, maternity and parental leave, retirement, resignation, dismissal for cause or termination of an agreement for default.

If the Offeror is unable to provide a substitute with similar qualifications and experience, Canada may set aside the standing offer.

**7A.13 Names of qualified resources**

The offeror must provide the names of the qualified resources who will be assigned to work on this Standing Offer. The names provided below must be the same personnel listed in part 4 & part 6 of the offer.

<b>Labourers</b> (first & last name)	<b>Site Supervisor</b> (first & last name)	<b>Senior Resources</b> (first & last name)

**7A.14 Applicable Laws**

The Standing Offer and any contract resulting from the Standing Offer must be interpreted and governed, and the relations between the parties determined, by the laws in force in the province or territory where the work is performed.



## **7B. RESULTING CONTRACT CLAUSES**

The following clauses and conditions apply to and form part of any contract resulting from a call-up against the Standing Offer.

### **7B.1 Statement of Work**

The Contractor must perform the Work described in the call-up against the Standing Offer.

### **7B.2 Standard Clauses and Conditions**

#### **7B.2.1 General Conditions - Services**

2035 (2016-04-04), General Conditions - Higher Complexity - Services, apply to and form part of the Contract.

The text under Subsection 4 of Section 41 - Code of Conduct and Certifications - Contract of 2035 referenced above is replaced by:

During the entire period of the Standing Offer and any call-ups made against the Standing Offer, the Offeror must diligently update, by written notice to the Standing Offer Authority, the list of names of all individuals who are directors of the Offeror whenever there is a change. As well, whenever requested by Canada, the Offeror must provide the corresponding Consent Forms.

### **7B.3 Term of Contract**

#### **7B.3.1 Period of Contract**

The Work must be completed in accordance with the call-up against the Standing Offer.

### **7B.4 Proactive Disclosure of Contracts with Former Public Servants**

### **7B.5 Payment**

#### **7B.5.1 Basis of Payment**

The Contractor will be paid firm hourly rates specified at Annex B2, Financial Offer for work performed in accordance with the Contract. Applicable Taxes are extra.

#### **7B.5.2 Method of Payment**

- a) Payment by Canada for the Work will be made following delivery, inspection and acceptance of the Work and upon presentation of invoices and any other substantiating documentation as Canada requires.
- b) Invoices must be submitted in accordance with the instructions contained in the article entitled "Invoicing Instructions".

#### **7B.5.3 SACC Manual Clauses**

A9117C (2007-11-30) T1204 - Direct Request by Customer Department

### **7B.6 Invoicing Instructions**

The Contractor must submit invoices in accordance with the Section 12, entitled "Invoice Submission" of the 2035 General Conditions - Services. Invoices cannot be submitted until all work identified in the invoice is completed.

1. Each invoice must be supported by:
  - a. a copy of time sheets to support the time claimed;

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- b. a copy of the release document and any other documents as specified in the Contract;

2. Invoices must be distributed as follows:

The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.

**7B.7 Insurance – Specific Requirements**

The Contractor must comply with the insurance requirements specified in the following **article 7B.7.1 Commercial General Liability Insurance**. The Contractor must maintain the required insurance coverage for the duration of the Contract. Compliance with the insurance requirements does not release the Contractor from or reduce its liability under the Contract.

The Contractor is responsible for deciding if additional insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any additional insurance coverage is at the Contractor's expense, and for its own benefit and protection.

The Contractor must forward to the Contracting Authority within ten (10) days after the date of award of the Contract, a Certificate of Insurance evidencing the insurance coverage and confirming that the insurance policy complying with the requirements is in force. Coverage must be placed with an Insurer licensed to carry out business in Canada. The Contractor must, if requested by the Contracting Authority, forward to Canada a certified true copy of all applicable insurance policies.

**7B7.1 Commercial General Liability Insurance**

1. The Contractor must obtain Commercial General Liability Insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$2,000,000 per accident or occurrence and in the annual aggregate.
2. The Commercial General Liability policy must include the following:
  - a. Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada should read as follows: Canada, as represented by Public Works and Government Services Canada.
  - b. Bodily Injury and Property Damage to third parties arising out of the operations of the Contractor.
  - c. Products and Completed Operations: Coverage for bodily injury or property damage arising out of goods or products manufactured, sold, handled, or distributed by the Contractor and/or arising out of operations that have been completed by the Contractor.
  - d. Personal Injury: While not limited to, the coverage must include Violation of Privacy, Libel and Slander, False Arrest, Detention or Imprisonment and Defamation of Character.
  - e. Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
  - f. Blanket Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.
  - g. Employees and, if applicable, Volunteers must be included as Additional Insured.

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- h. Employers' Liability (or confirmation that all employees are covered by Worker's compensation (WSIB) or similar program)
- i. Broad Form Property Damage including Completed Operations: Expands the Property Damage coverage to include certain losses that would otherwise be excluded by the standard care, custody or control exclusion found in a standard policy.
- j. Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of policy cancellation.
- k. If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.
- l. Owners' or Contractors' Protective Liability: Covers the damages that the Contractor becomes legally obligated to pay arising out of the operations of a subcontractor.
- m. Sudden and Accidental Pollution Liability (minimum 120 hours): To protect the Contractor for liabilities arising from damages caused by accidental pollution incidents.
- n. Litigation Rights: Pursuant to subsection 5(d) of the [Department of Justice Act](#), S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

**For the province of Quebec, send to:**

Director Business Law Directorate,  
Quebec Regional Office (Ottawa),  
Department of Justice,  
284 Wellington Street, Room SAT-6042,  
Ottawa, Ontario, K1A 0H8

**For other provinces and territories, send to:**

Senior General Counsel,  
Civil Litigation Section,  
Department of Justice  
234 Wellington Street, East Tower  
Ottawa, Ontario K1A 0H8

A copy of the letter must be sent to the Contracting Authority. Canada reserves the right to co-defend any action brought against Canada. All expenses incurred by Canada to co-defend such actions will be at Canada's expense. If Canada decides to co-defend any action brought against it, and Canada does not agree to a proposed settlement agreed to by the Contractor's insurer and the plaintiff(s) that would result in the settlement or dismissal of the action against Canada, then Canada will be responsible to the Contractor's insurer for any difference between the proposed settlement amount and the amount finally awarded or paid to the plaintiffs (inclusive of costs and interest) on behalf of Canada.

**7B7.2 Automobile Liability Insurance**

1. The Contractor must obtain Automobile Liability Insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$2,000,000 per accident or occurrence.

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2. The policy must include the following:
  - a. Third Party Liability - \$2,000,000 Minimum Limit per Accident or Occurrence
  - b. Accident Benefits - all jurisdictional statutes
  - c. Uninsured Motorist Protection
  - d. Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of cancellation.

#### **7B7.3 Environmental Impairment Liability Insurance**

1. The Contractor must obtain "Pollution Legal Liability – Fixed Site Coverage", "Contractors Pollution Liability" and "Contractors Professional Liability" insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$1,000,000 per accident or occurrence and in the annual aggregate.
2. If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.
3. The "Pollution Legal Liability – Fixed Site Coverage", "Contractors Pollution Liability" and "Contractors Professional Liability" policy must include the following:
  - a. Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada as additional insured should read as follows: Canada, represented by Public Works and Government Services Canada.
  - b. Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of policy cancellation.
  - c. Separation of Insureds: The policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
  - d. Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.
  - e. Incidental Transit Extension: The policy must extend to losses arising from any waste, products or materials transported, shipped, or delivered via any transportation mode to a location beyond the boundaries of a site at which the Contractor or any entity for which the Contractor is legally liable is performing or has performed the operations described in the contract.

#### **7B.8 Government Site Regulations**

The Contractor must comply with all regulations, instructions and directives in force on the site where the Work is performed.

#### **7B.9 Pre-Commencement Meeting**

A pre-commencement meeting is mandatory for the Contractor prior to commencing any work and minutes of the meeting shall be taken. The time and place of this meeting will be determined by the Departmental Representative.

The Contractor is to supply the Technical Authority with a copy of its safety policy as required by the applicable Provincial Occupational Safety and Health Regulations.

Annex A  
Statement of Work

Designated Substance and Hazardous Material Removal or Repair  
EP914-161372/B

**1.0 Objective**

- 1.1 To provide rapid response services for anticipated designated substances and hazardous materials (DSHM) removal or repair including Type 1, Type 2 (including glove bag) and Type 3 asbestos work operations; Type 1, Type 2 and Type 3a lead removal operations; and Level 1, Level 2 and Level 3 mould and bat and bird dropping removal as well as Type 1 and Type 2 silica work operations.
- 1.2 Various buildings throughout the National Capital Area (NCA) require frequent minor work operations involving DSHM in order to implement regular building operational and maintenance activities, as well as accommodating minor property management-driven projects. Large scale work operations may also be requested from time to time. The intention of creating a Standing Offer is to provide in a timely manner, consistent, reliable DSHM contracting services to environmental specialists within NCA and Parliament Precinct Branch (PPB).
- 1.3 The main objective of this SO is to provide the following services as a minimum:
- a) To provide appropriate asbestos emergency response and asbestos decontamination operations in PWGSC-serviced facilities in the NCA
  - b) To provide all appropriate tools, materials, and personal protective equipment in accordance with the Ontario Regulation 278/05 (O.Reg 278/05) or the Safety Code for the Construction Industry (Q.Reg S-2.1, r.4) and the Regulation Respecting Occupational Health and Safety (Q.Reg S-2.1, r.13) for asbestos work operations in PWGSC-serviced facilities in the NCA including:
    - o Type 1,
    - o Type 2,
    - o Glove bag and,
    - o Type 3.
  - c) To provide all appropriate tools, materials, and personal protective equipment in accordance with the Ontario Regulation 490/09 (O.Reg 490/09), Government of Ontario 2004 Guideline – Lead on Construction Projects and with Q.Reg S-2.1, r.4 for lead work operations in PWGSC-serviced facilities in the NCA.
    - o Type 1,
    - o Type 2,
    - o Type 3a.
  - d) To provide all appropriate tools, materials, and personal protective equipment in accordance with Environmental Abatement Council of Ontario (EACO) Mould Guidelines 2010 and the Canadian Construction Association (CCA) 82-2004 – Mould Guidelines for the Canadian Construction Industry for mould, and bat and bird droppings removal operations in PWGSC-serviced facilities in the NCA.
    - o Level 1,
    - o Level 2,
    - o Level 3.
  - e) To provide all appropriate tools, materials, and personal protective equipment in accordance with the O.Reg 490/09 and Government of Ontario 2004 Guideline –

Silica on Construction Projects for silica work operations in PWGSC-serviced facilities in the NCA.

- Type 1 and,
- Type 2.

f) To transport and dispose of all asbestos, lead, mould and/or silica contaminated wastes in an appropriate manner.

1.4 For the purpose of this request for standing offer, "minor work operations" refers to all DSHM work operations limited in size to less than 10m<sup>2</sup>. Medium and large-scale abatements are operations covering an area larger than 10m<sup>2</sup> or larger quantities of materials.

## **2.0 Definition of Terms**

- 2.1 "Asbestos-related projects" refers to any project wherein asbestos materials will be destroyed, damaged, removed, or otherwise affected during the course of the project, or may require the disposal of asbestos-contaminated wastes.
- 2.2 "Call-up" against a Standing Offer (SO) is an order issued under the authority of a duly authorized user against a particular SO. Communication of a call-up against a SO to the Offeror constitutes acceptance of the SO to the extent of the services being ordered and causes a contract to come into effect. The parties to the contract that comes into effect when a call-up against a SO is made are Canada, as represented by PWGSC and the Offeror.
- 2.3 "Designated substance" is a substance defined as such in the (Ontario *Occupational Health and Safety Act* (OHSa)).
- 2.4 "Work area" refers to the specific area in which work operations take place, in which engineering controls are used to control the spread of airborne fibre or dust caused directly or indirectly by any work operation. The SO holder must provide the required protective equipment in accordance to OHSa guidelines at no additional cost to the call-up.
- 2.5 "Outside Regular Hours" refers to times when building occupancy loads are minimal, typically during evenings and weekends. Evening hours are considered by PWGSC to be between 6:00 p.m. and 6:00 am.
- 2.6 "Emergency Response" refers to a request for services called-up against the Standing Offer where there is a stated high risk to human health and safety or significant damage to a building likely to occur if rapid response and corrective action are not undertaken within 4 hour time frame, 24 hours, 7 days a week including holidays.
- 2.7 "Rapid Response" PWGSC understands the term rapid response to meaning within 24 hours the SO holder would respond to a call-up request made against the Standing Offer. In this case the response would be the provision of cost estimates, and a schedule of work to be implemented in the shortest possible time within a 24 hour time frame, including weekends and holidays.
- 2.8 "Hazardous materials" are substances that could cause injury or death; or damage or pollute land, air, or water. In the context of this requirement hazardous materials includes but is not limited to asbestos, lead, polychlorinated biphenyl (PCBs), crystalline silica, mercury, mould, bat and bird droppings and halocarbons.
- 2.9 "Labourers" are expected to provide abatement services. Qualifications must include the MTCU 253W Asbestos Abatement Worker certificate.
- 2.10 "Site Supervisors" are expected to provide abatement services and ensure labourers' health and safety on site. Qualifications must include the MTCU 253S Asbestos Abatement Supervisor certificate.

- 2.11 "Senior Resources" are expected to assist job showings and coordinate work with the Technical Authority and/or Identified Users.
- 2.12 The NCA boundary for PWGSC is recognized as the Regional Municipality of Ottawa-Carleton boundary on the Ontario side and the Outaouais Regional Community on the Québec side.

### **3.0 Background**

- 3.1 The PWGSC Real Property Branch have at various times in the past few decades provided the expertise and engineering guidance for asbestos abatement and asbestos decontamination activities for federal facilities throughout the NCA.
- 3.2 Presently, the Professional & Technical Services (PTS) - Environmental Services (ES) of the NCA Operations Sector reporting to the Real Property Branch of PWGSC is the authority on asbestos, lead, mould and silica abatement activities. ES has observed the requirement for frequent, short duration designated substance-related projects and less frequent longer duration projects, has become more prevalent in the day-to-day operations and maintenance of PWGSC-serviced facilities. These projects also frequently overlap other trades or service providers' responsibilities, and, at times necessitate the combination of several types of DSHM-related works within one project.
- 3.3 Frequency of projects and expectations of PWGSC's client base is driving the need to find a more streamlined process in which DSHM work operations and services are secured and provided in PWGSC-serviced facilities. It is thought that a single line of service for specific DSHM services would facilitate the implementation of operations and maintenance, and facility-driven projects in the NCA.

### **4.0 Scope of Work**

#### **4.1 Work Description**

The scope of work includes, based on O.Reg 278/05, Q.Reg S-2.1 r.4, Government of Ontario 2004 Guidelines – Lead on Construction Projects, EACO Mould Guidelines 2010 and Government of Ontario 2004 Guidelines – Silica on Construction Projects, but is not limited to:

##### **4.1.1 ASBESTOS**

###### **TYPE 1/Low-Risk:**

- a) Installing or removing ceiling tiles that are asbestos-containing material, if the tiles cover an area less than 7.5 square meters and are installed or removed without being broken, cut, drilled, abraded, ground, sanded or vibrated.
- b) Installing or removing non-friable asbestos-containing material, other than ceiling tiles, if the material is installed or removed without being broken, cut, drilled, abraded, ground, sanded or vibrated.
- c) Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material if,
  - i. the material is wetted to control the spread of dust or fibres, and
  - ii. the work is done only by means of non-powered hand-held tools.
  - iii. In Québec, the work is done using a power tool with a dust-collection device equipped with a HEPA filter.
- d) Removing less than one square meter of drywall in which joint-filling compounds that are asbestos-containing material have been used.



#### 4.1.2 TYPE 2/Moderate-Risk:

- a) Removing all or part of a false ceiling to obtain access to a work area, if asbestos-containing material is likely to be lying on the surface of the false ceiling.
- b) The removal or disturbance of one square meter or less of friable asbestos-containing material during the repair, alteration, maintenance or demolition of all or part of machinery or equipment or a building.
- c) Enclosing friable asbestos-containing material.
- d) Applying tape or a sealant or other covering to pipe or boiler insulation that is asbestos-containing material.
- e) Installing or removing ceiling tiles that are asbestos-containing material, if the tiles cover an area of 7.5 square meters or more and are installed or removed without being broken, cut, drilled, abraded, ground, sanded or vibrated.
- f) Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material if,
  - i. the material is not wetted to control the spread of dust or fibres, and
  - ii. the work is done only by means of non-powered hand-held tools.
- g) Removing one square meter or more of drywall in which joint filling compounds that are asbestos-containing material have been used.
- h) Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material if the work is done by means of power tools that are attached to dust-collecting devices equipped with HEPA filters.
- i) Removing insulation that is asbestos-containing material from a pipe, duct or similar structure using a glove bag. This includes glove bag operations requiring Notice of Project variance approvals from the provincial Ministry of Labour, due to length of pipe insulation(s) being removed in a given work area.
- j) Cleaning or removing filters used in air handling equipment in a building that has sprayed fireproofing that is asbestos-containing material.
- k) In Québec, removal of small quantities of friable material having a volume below 0.03m<sup>3</sup> for each minor renovation or regular specific maintenance job.
- l) An operation that,
  - i. is not mentioned in the Scope of Work above,
  - ii. may expose a worker to asbestos, and
  - iii. Or, is not classified as a Type 3 operation.

#### 4.1.3 TYPE 3/High-Risk:

- a) Removal or disturbance as specified of more than one square meter of friable asbestos containing material during the repair, alteration, maintenance or demolition of a building or any machinery or equipment.
- b) The spray application of a sealant to friable asbestos containing material.
- c) Cleaning or removing air handling equipment, including rigid ducting but not including filters, in a building that has asbestos containing sprayed fireproofing.
- d) Repairing, altering or demolishing all or part of a kiln, metallurgical furnace or similar structure that is made in part of refractory materials that are asbestos containing materials.



- e) Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos containing material, if the work is done by means of power tools that are not attached to dust-collecting devices equipped with HEPA filters.
  - f) Repairing, altering or demolishing all or part of any building in which asbestos is or was used in the manufacture of products.
- 4.1.4 Using HEPA-equipped vacuums to decontaminate areas of settled dust thought to contain asbestos.
- 4.1.5 Supplying Type 2 asbestos work enclosures to access suspended ceiling spaces thought or known to contain friable asbestos, where access to these spaces would likely disturb friable asbestos materials.
- 4.1.6 Save for the last two items under the asbestos Scope of Work, terminology and work descriptions are derived directly from the Ontario Health and Safety Act Regulation 278/05 Section 12 and the Québec Safety Code for the Construction Industry. PWGSC requires that all work operations involving asbestos in PWGSC-serviced facilities would adhere strictly to the requirements of this regulation, whether stated under this Scope of Work or not.
- 4.1.7 LEAD
- 4.1.7.1 TYPE 1:
- a) Removal of lead-containing coatings with a chemical gel or paste and fibrous laminated cloth wrap on walls and/or ceilings.
  - b) Removal of lead-containing coatings or materials using a power tool with an effective dust collection system equipped with a HEPA filter on walls and/or ceilings.
  - c) Removal of lead-containing coatings or materials with non-powered hand tool, other than manual scraping and sanding on walls and/or ceilings.
- 4.1.7.2 TYPE 2:
- a) Removal of lead based paint from walls and/or ceilings by scraping or sanding using non-powered hand tools.
  - b) Manual demolition of lead-painted plaster walls or building components by striking wall with sledgehammer or similar tool.
- 4.1.7.3 TYPE 3a:
- a) An operation that may expose a worker to lead dust, fume or mist that is not a Type 1, Type 2 or Type 3b operation.
- 4.1.8 MOULD
- 4.1.8.1 LEVEL 1:
- a) Small isolated areas <1m<sup>2</sup> or clean-up of <1m<sup>2</sup> of mould growth in HVAC systems in non-occupied areas.
- 4.1.8.2 LEVEL 2:
- a) Medium areas, 1-10m<sup>2</sup> or <1m<sup>2</sup> in HVAC systems in occupied areas.
- 4.1.8.3 LEVEL 3:
- a) Large areas, >10m<sup>2</sup> or >1m<sup>2</sup> in HVAC systems.
- 4.1.9 SILICA
- 4.1.9.1 TYPE 1:
- a) Drilling in concrete or rock that is not part of a tunneling operation or road construction
  - b) Any other operation at a project that requires the handling of silica containing material in a way that may result in a worker being exposed to airborne silica.

#### 4.1.9.2 TYPE 2:

- a) The use of a power tool to cut grind or polish concrete, masonry, terrazzo, or refractory materials
- b) The use of a power tool to chip, break and remove silica-containing materials.
- c) Dry mortar removal with an electric or pneumatic cutting device

4.1.10 Due to the nature of PWGSC-serviced facilities and occupants of these facilities, it should be expected that the majority of DSHM-related works would take place during outside regular hours (evenings, weekends, including Statutory Holidays).

4.1.11 The SO holder must be responsible for the proper containment, transportation and disposal of all waste materials generated during DSHM-related projects awarded against this Standing Offer, in accordance with O.Reg 347/09 as amended.

4.1.12 The SO holder may be required to transport and dispose of asbestos-contaminated wastes generated by other PWGSC building operations and maintenance activities outside of projects awarded against this Standing Offer. This can include samples, pieces of fallen Asbestos Containing Materials (ACM) materials, etc. These will be provided in double-bagged containers.

## 4.2 Review of Existing Conditions

4.2.1 Because of the number of PWGSC facilities in the NCA, it is impossible to review conditions existing at each and every proposed project location. O.Reg 278/05, Q.Reg S-2.1, r.13 s. IX.I and the NJC OHSD XI-11.6 requires an annual (biennial in Québec) survey of all existing asbestos materials. It is expected that the majority of asbestos-containing materials are in good condition, or are regularly repaired.

4.2.2 Every PWGSC facility containing asbestos materials maintains an Asbestos Management Plan (AMP), outlining the type, location and condition of known friable asbestos materials. The relevant information contained in the AMPs would be made accessible to the SO holder.

4.2.3 Call-ups made against the Standing Offer will include the necessary details regarding project size and schedule, as well as all known information with respect to building materials and any related projects occurring in the same proposed work area. Each individual call-up made against the Standing Offer will allow for a project site visit prior to the SO holder submitting cost estimates.

## 5.0 Client Support

5.1 The PWGSC authority that issues a call-up for services against the Standing Offer will provide the following information, where requested by the SO holder in order to supply adequate project information and details to successfully complete the requested service:

- 5.1.1 A Designated Substances Report specific to the proposed project
- 5.1.2 Specification sections specific to the proposed project
- 5.1.3 Access to all available and pertinent Asbestos Management Plans
- 5.1.4 A building or floor plan of the proposed project location
- 5.1.5 A proposed schedule, which shall include the schedule of any other engineers, trades-people, private-sector contractors, private-sector consultants requiring access to the work area.
- 5.1.6 Work area-specific parameters such as noise or odour controls

- 5.1.7 Building Access Authorization for project-specific work areas, with proper advance notification to appropriate building security services.
  - 5.1.8 The services of building technicians and their support staff with respect to electrical systems, water systems, HVAC systems or any other building system requiring access, deactivation, temporary shut-down or emergency interventions during the planning and implementation of proposed projects.
  - 5.1.9 Any additional federal legislative, regulatory or departmentally mandated requirements specific to the proposed project.
  - 5.1.10 Any other known health and safety-related risks associated with the proposed project, including but not limited to:
    - a) Fall arrest requirement for work above 6 feet in height
    - b) Confined Spaces assessments and requirements
    - c) Building systems requiring deactivation prior to commencement of work
- 5.2 Additionally, PWGSC may suggest the number of labourers it feels would be necessary or required to complete proposed projects in order to meet schedule deadlines, in consultation with the SO holder. PWGSC shall take into consideration project-specific, and work area-specific health and safety requirements when requesting the size of the workforce. At no time will the SO holder require that labourers work alone on any proposed PWGSC project under the Standing Offer.
- 5.3 PWGSC may or may not require independent, third-party quality assurance or quality control for asbestos-related work awarded under the Standing Offer. The SO holder will take the direction and recommendation of the acknowledged independent third-party QA/QC representative as direction from PWGSC itself. This third party QA/QC official may be required to inspect asbestos-related works resulting from call-ups made against the Standing Offer for adherence to applicable legislations or regulations, may be requested to provide air sampling relating to the asbestos-related work at hand, and may also request the SO holder to stop work or alter work parameters at any given time, provided that PWGSC is made aware in advance.

## **6.0 Invoicing**

- 6.1 All invoicing against this Standing Offer shall indicate the number of man-hours, all applicable billable rates, the costs for the total materials utilized for each project, and the costs for transportation and proper disposal of all wastes generated during each project.
- 6.2 In the event that the rental of equipment or tools is required to satisfy a call-up for services against the Standing Offer, the SO holder must notify the technical authority in advance of providing a cost estimate, providing justification for the rental of equipment or tools in writing. The cost of the rental of tools or equipment must be included as a line item within the cost estimate provided by the SO holder.
- 6.3 PWGSC considers billable materials to consist of disposable equipment or materials used during the course of a single project. Reusable equipment or materials shall not be included on invoices against the Standing Offer.

## **7.0 Responsibilities and Deliverables**

- 7.1 Meeting and maintaining the required security requirement is a condition of the Standing Offer.
- 7.2 PWGSC shall not be held responsible for security clearances of personnel that expire during the course of the Standing Offer, nor for the re-application of required security

clearances. No building authorization access shall be granted to personnel not possessing a valid level of security clearance. No security escorts shall be provided for personnel not possessing a valid level of security clearance.

## **8.0 Acronyms**

AMP – Asbestos Management Plan  
CCA – Canadian Construction Association  
CSST – Commission de la santé et de la sécurité du travail  
DSHM – Designated Substances and Hazardous Materials  
EACO – Environmental Abatement Council of Ontario  
ES – Environmental Services  
HEPA – High Efficiency Particulate Air  
HVAC – Heating, Ventilation and Air Conditioning  
MTCU – Ministry of Training, Colleges and Universities  
NCA – National Capital Area  
NJC OHSD – National Joint Council Occupational Health and Safety Directive  
OHSa – Occupational Health and Safety Act  
O.Reg – Ontario Regulation  
PPB – Parliamentary Precinct Branch  
PWGSC – Public Works and Government Services Canada  
Q.Reg – Québec Regulation  
QA/QC – Quality Assurance/Quality Control  
RBQ – Régie du Bâtiment du Québec  
SO – Standing Offer  
SOA – Standing Offer Agreement  
WSIB – Workplace Safety Insurance Board

## **9.0 References**

Ontario Regulation 278/05 – Asbestos on construction projects, in buildings and in repair operations.  
Ontario Regulation 490/09 – Designated Substances  
Ontario Regulation 347/90 – General – Waste Management  
Government of Ontario 2004 Guideline – Lead on Construction Projects  
Government of Ontario 2004 Guideline – Silica on Construction Projects  
Environmental Abatement Council of Ontario – Mould Guidelines 2010  
Safety Code for the Construction Industry (Q.Reg S-2.1, r.4)  
Regulation Respecting Occupational Health and Safety (Q.Reg S-2.1, r.13)  
National Joint Council Occupational Health and Safety Directive Part IX-I Section 11.6

**ANNEX B1**  
EP914-161372/B

**Financial Offer – Basis of Payment**

Offeror Name and Address:

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I/ We the Offeror, when requested by the Standing Offer Authority during the period of the Standing Offer, will calculate individual project estimates in accordance with the fixed hourly rates (excluding H.S.T.) in accordance with the information provided in **ANNEX B2**.

Unless otherwise approved in writing by the Standing Offer Authority, I/we the Offeror undertake:

- a) To employ only those classes of persons with skill levels appropriate to each task, as defined in the Scope of Work section of each call-up.
- b) To prorate accordingly to cover the actual time worked, where work performed using the Time-Based Fee Method, is of a duration of less than one hour.
- c) To provide a full and comprehensive list of names of each individual to be assigned to a project subject to a call-up of Services.

Signature of Offeror:

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Name 

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Title 

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**ANNEX B2**  
**EP914-161372/B**  
**Financial Offer - BASIS OF PAYMENT**

**1. Firm Hourly Rates**

In order to ensure that fair and competitive hourly rates are received for each of the positions listed, the following requirement must be strictly adhered to: offerors must provide an hourly rate for each listed position. The hourly rate provided must be equal to or greater than the hourly rate provided for the position listed **above** it. Hourly rates in sections (ii) must be equal to or greater than the corresponding resource hourly rates at section (i). Hourly rates in subsequent years must be equal to or greater than the resource hourly rates from previous year/s. The hourly rate for any given category of personnel cannot be \$0 or nil value. Failure to insert an hourly rate for each position listed will render your proposal non-responsive.

Submit Firm All-inclusive Hourly Rate (including profit, overhead expenses such as administrative support, facsimile, courier, photocopying, mail, word processing, office supplies, other operating costs and travel within NCA) in Canadian funds. Firm All-inclusive Hourly Rate will be used as the basis of payment for each call-up. Weighted rate is for financial evaluation purposes only. The Contractor will be paid firm hourly rates as follows, for work performed in accordance with the Contract. Applicable Taxes are extra.

**For the purpose of calculating the Weighted (W'ted) Rate, the Hourly Rate for each resource is multiplied by each allocated weight factor (%). See sample calculation below and apply the same principle to i, ii and iii. Example: If hourly is \$60 with a weighted factor of 20%, then weighted rate is \$60 x 20% = \$12**

i) Regular Hours 06:00 to 18:00, Monday to Friday excluding Statutory Holidays	Weight Factor (%)	Year 1		Year 2		Year 3		Year 4		Year 5	
		Hourly Rate	W'ted rate	Hourly Rate	W'ted rate	Hourly Rate	W'ted rate	Hourly Rate	W'ted rate	Hourly Rate	W'ted rate
(A) Labourers	40%										
(B) Site Supervisors	40%										
(C) Senior Resources	20%										
Combined weighted rate (A+B+C) per year											
<b>Total combined weighted rate for Year 1 to 5 (i) x 75%</b>											

ii) Outside regular hours after 18:00 hours, evenings and weekends, including Statutory Holidays	Weight Factor (%)	Year 1		Year 2		Year 3		Year 4		Year 5	
		Hourly Rate	W'ted rate	Hourly Rate	W'ted rate	Hourly Rate	W'ted rate	Hourly Rate	W'ted rate	Hourly Rate	W'ted rate
(A) Labourers	40%										
(B) Site Supervisors	40%										
(C) Senior Resources	20%										
Combined weighted rate (A+B+C) per year											
<b>Total combined weighted rate for Year 1 to 5 (ii) x 25%</b>											
<b>Grand total combined weighted rate for 5 years (i+ii)</b>											

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## 2. Waste

Asbestos and lead waste have specific disposal requirements such as only being sent to certified landfills.

Transport of these materials falls under the Transport of Dangerous Goods Act. Weigh bills will be required for each disposal and invoicing must reflect the weight of asbestos or lead waste removed.

Type of waste	Weight factor (%)	Year 1		Year 2		Year 3		Year 4		Year 5	
		Per item	W'ted rate	Per item	W'ted rate	Per item	W'ted rate	Per item	W'ted rate	Per item	W'ted rate
(A) Asbestos Waste per tonne	95%										
(B) Lead Waste containers	5%										

## 3. Materials and equipment rental

Materials and equipment rental are to be at cost and reusable materials are to be reused or recycled. The Contractor must submit all such invoices. PWGSC will pay based on actual cost charged and invoices submitted.

## 4. Travel

When travel is required, the Contractor is responsible for all travel arrangements to perform the work at no additional cost to each call-up.

Travel outside of National Capital Area (NCA) will be paid in accordance with the following:

For Work to be performed at a **work location** outside of NCA.

1. The Contractor will be reimbursed for the authorized travel and living expenses reasonably and properly incurred in the performance of the Work, at cost, without any allowance for overhead or profit, in accordance with the meal, private vehicle and incidental expense allowances specified in Appendices B, C and D of the Treasury Board Travel Directive, and with the other provisions of the directive referring to "travelers", rather than those referring to "employees".
2. Canada will not accept any travel and living expenses incurred by the Contractor as a consequence of any relocation of personnel required to satisfy the terms of this Contract.
3. All travel must have the prior authorization of the Identified User. All payments are subject to government audit.

### Travel Time:

The Contractor will not be paid any firm hourly rates for travel time.

\*Travel Status Time will be limited to 50% of the hourly rate.

Time spent by a contracted individual travelling to and from specific pre-authorized work assignments (not commuting) that are outside of NCA may be billed at 50% of the firm hourly rate.



Contract Number / Numéro du contrat	EP914-161372	Security Classification / Classification de sécurité UNCLASSIFIED
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SECURITY REQUIREMENTS CHECK LIST (SRCL)  
LISTE DE VÉRIFICATION DES EXIGENCES RELATIVES À LA SÉCURITÉ (LVERS)

1. Originating Government Department or Organization / Ministère ou organisme gouvernemental d'origine Canada Public Works and Government Services Real Property		2. Branch or Directorate / Direction générale ou Direction
3. a) Subcontract Number / Numéro du contrat de sous-traitance		
3. b) Name and Address of Subcontractor / Nom et adresse du sous-traitant		
4. Brief Description of Work / Brève description du travail Designated Substance and Hazardous Material Removal and Repair - NCA Buildings		

5. a) Will the supplier require access to Controlled Goods? Le fournisseur aura-t-il accès à des marchandises contrôlées?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Oui
5. b) Will the supplier require access to unclassified military technical data subject to the provisions of the Technical Data Control Regulations? Le fournisseur aura-t-il accès à des données techniques militaires non classifiées qui sont assujetties aux dispositions du Règlement sur le contrôle des données techniques?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Oui

6. a) Will the supplier and its employees require access to PROTECTED and/or CLASSIFIED information or assets? Le fournisseur ainsi que les employés auront-ils accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Oui
6. b) Will the supplier and its employees (e.g. cleaners, maintenance personnel) require access to restricted access areas? No access to PROTECTED and/or CLASSIFIED information or assets is permitted. (Préciser le niveau d'accès en utilisant le tableau qui se trouve à la question 7. c) Le fournisseur et ses employés (p. ex. nettoyeurs, personnel d'entretien) auront-ils accès à des zones d'accès restreintes? L'accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS n'est pas autorisé.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Oui
6. c) Is this a commercial courier or delivery requirement with no overnight storage? S'agit-il d'un contrat de messagerie ou de livraison commerciale sans entreposage de nuit?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Oui

7. a) Indicate the type of information that the supplier will be required to access / Indiquer le type d'information auquel le fournisseur devra avoir accès	<input type="checkbox"/> Canada <input type="checkbox"/> NATO / OTAN <input type="checkbox"/> Foreign / Etranger
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7. b) Release restrictions / Restrictions relatives à la diffusion	<input type="checkbox"/> No release restrictions Aucune restriction relative à la diffusion	<input type="checkbox"/> All NATO countries Tous les pays de l'OTAN	<input type="checkbox"/> Restricted to: / Limité à : Specify country(ies): / Préciser le(s) pays :
7. c) Level of information / Niveau d'information	<input type="checkbox"/> Not releasable A ne pas diffuser	<input type="checkbox"/> Restricted to: / Limité à : Specify country(ies): / Préciser le(s) pays :	<input type="checkbox"/> Restricted to: / Limité à : Specify country(ies): / Préciser le(s) pays :

PROTECTED A	<input type="checkbox"/>	NATO UNCLASSIFIED	<input type="checkbox"/>	PROTECTED A	<input type="checkbox"/>
PROTECTED B	<input type="checkbox"/>	NATO RESTRICTED	<input type="checkbox"/>	PROTECTED B	<input type="checkbox"/>
PROTECTED C	<input type="checkbox"/>	NATO DIFFUSION RESTREINTE	<input type="checkbox"/>	PROTECTED C	<input type="checkbox"/>
PROTECTED C	<input type="checkbox"/>	NATO CONFIDENTIAL	<input type="checkbox"/>	PROTECTED C	<input type="checkbox"/>
CONFIDENTIAL	<input type="checkbox"/>	NATO CONFIDENTIAL	<input type="checkbox"/>	CONFIDENTIAL	<input type="checkbox"/>
SECRET	<input type="checkbox"/>	NATO SECRET	<input type="checkbox"/>	SECRET	<input type="checkbox"/>
SECRET	<input type="checkbox"/>	COSMIC TOP SECRET	<input type="checkbox"/>	SECRET	<input type="checkbox"/>
TOP SECRET	<input type="checkbox"/>	COSMIC TRÈS SECRET	<input type="checkbox"/>	TOP SECRET	<input type="checkbox"/>
TRÈS SECRET	<input type="checkbox"/>			TRÈS SECRET	<input type="checkbox"/>
TOP SECRET (SIGINT)	<input type="checkbox"/>			TOP SECRET (SIGINT)	<input type="checkbox"/>
TRÈS SECRET (SIGINT)	<input type="checkbox"/>			TRÈS SECRET (SIGINT)	<input type="checkbox"/>

Security Classification / Classification de sécurité  
UNCLASSIFIED

TBS/SC 350-103(2004/12)



Contract Number / Numéro du contrat	EP914-161372	Security Classification / Classification de sécurité UNCLASSIFIED
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**PART A (continued) / PARTIE A (suite)**

8. Will the supplier require access to PROTECTED and/or CLASSIFIED COMSEC information or assets?  
Le fournisseur aura-t-il accès à des renseignements ou à des biens COMSEC désignés PROTÉGÉS et/ou CLASSIFIÉS?  
If Yes, indicate the level of sensitivity.  
Dans l'affirmative, indiquer le niveau de sensibilité:

9. Will the supplier require access to extremely sensitive INFOSEC information or assets?  
Le fournisseur aura-t-il accès à des renseignements ou à des biens INFOSEC de nature extrêmement délicate?  
Short Title(s) of material / Titre(s) abrégé(s) du matériel :  
Document Number / Numéro du document :

**PART B - PERSONNEL (SUPPLIER) / PARTIE B - PERSONNEL (FOURNISSEUR)**

10. a) Personnel security screening level required / Niveau de contrôle de la sécurité du personnel requis

RELIABILITY STATUS	<input type="checkbox"/>	CONFIDENTIAL	<input checked="" type="checkbox"/>	SECRET	<input type="checkbox"/>
COTE DE FIABILITÉ	<input type="checkbox"/>	CONFIDENTIEL	<input checked="" type="checkbox"/>	SECRET	<input type="checkbox"/>
TOP SECRET - SIGHT	<input type="checkbox"/>	NATO CONFIDENTIAL	<input type="checkbox"/>	NATO SECRET	<input type="checkbox"/>
TRÈS SECRET - SIGHT	<input type="checkbox"/>				
SITE ACCESS	<input type="checkbox"/>				
ACCÈS AUX EMPLACEMENTS	<input type="checkbox"/>				

NOTE: If multiple levels of screening are identified, a Security Classification Guide must be provided.  
REMARQUE: Si plusieurs niveaux de contrôle de sécurité sont requis, un guide de classification de la sécurité doit être fourni.

10. b) May unscreened personnel be used for portions of the work?  
Du personnel sans autorisation sécuritaire peut-il se voir confier des parties du travail?  
If Yes, will unscreened personnel be escorted?  
Dans l'affirmative, le personnel en question sera-t-il escorté?

**PART C - SAFEGUARDS (SUPPLIER) / PARTIE C - MESURES DE PROTECTION (FOURNISSEUR)**

11. a) Will the supplier be required to receive and store PROTECTED and/or CLASSIFIED information or assets on its site or premises?  
Le fournisseur sera-t-il tenu de recevoir et d'entreposer sur place des renseignements ou des biens PROTÉGÉS et/ou CLASSIFIÉS?  
11. b) Will the supplier be required to safeguard COMSEC information or assets?  
Le fournisseur sera-t-il tenu de protéger des renseignements ou des biens COMSEC?

**PRODUCTION**

11. c) Will the production (manufacture, and/or repair and/or modification) of PROTECTED and/or CLASSIFIED material or equipment occur at the supplier's site or premises?  
Les installations du fournisseur serviront-elles à la production (fabrication et/ou réparation et/ou modification) de matériel PROTÉGÉ et/ou CLASSIFIÉ?

**INFORMATION TECHNOLOGY (IT) MEDIA / SUPPORT RELATIF À LA TECHNOLOGIE DE L'INFORMATION (TI)**

11. d) Will the supplier be required to use its IT systems to electronically process, produce or store PROTECTED and/or CLASSIFIED information or data?  
Le fournisseur sera-t-il tenu d'utiliser ses propres systèmes informatiques pour traiter, produire ou stocker électroniquement des renseignements ou des données PROTÉGÉS et/ou CLASSIFIÉS?  
11. e) Will there be an electronic link between the supplier's IT systems and the government department or agency?  
Disposera-t-on d'un lien électronique entre le système informatique du fournisseur et celui du ministère ou de l'agence gouvernementale?

Contract Number / Numéro du contrat	EP914-161372
Security Classification / Classification de sécurité	UNCLASSIFIED

PART C - (continued) / PARTIE C - (suite)

For users completing the form manually use the summary chart below to indicate the category(ies) and level(s) of safeguarding required at the supplier's site(s) or premises.  
Les utilisateurs qui remplissent le formulaire manuellement doivent utiliser le tableau récapitulatif ci-dessous pour indiquer, pour chaque catégorie, les niveaux de sauvegarde requis aux installations du fournisseur.

For users completing the form online (via the Internet), the summary chart is automatically populated by your responses to previous questions.  
Dans le cas des utilisateurs qui remplissent le formulaire en ligne (par Internet), les réponses aux questions précédentes sont automatiquement saisies dans le tableau récapitulatif.

SUMMARY CHART / TABLEAU RÉCAPITULATIF

Catégorie	PROTÉGÉ			CONFIDENTIAL	SECRET	CLASSIFIÉ			NATO			COMSEC		
	A	B	C			TOP	RESTRICTED	NATO	CONFIDENTIAL	SECRET	TOP	CONFIDENTIAL	SECRET	TOP
Information / Assets														
Renseignements / Biens														
Production														
IT Media / Support TI														
IT Link /														
Lien électronique														

12. a) Is the description of the work contained within this SRCL PROTECTED and/or CLASSIFIED?  
La description du travail visé par la présente LVERS est-elle de nature PROTÉGÉE et/ou CLASSIFIÉE?
- If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification".  
Dans l'affirmative, classifiez le présent formulaire en indiquant le niveau de sécurité dans la case intitulée « Classification de sécurité » au haut et au bas du formulaire.
- Yes ☐ No ☒ Oui ☐
12. b) Will the documentation attached to this SRCL be PROTECTED and/or CLASSIFIED?  
La documentation associée à la présente LVERS sera-t-elle PROTÉGÉE et/ou CLASSIFIÉE?
- If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification" and indicate with attachments (e.g. SECRET with Attachments).  
Dans l'affirmative, classifiez le présent formulaire en indiquant le niveau de sécurité dans la case intitulée « Classification de sécurité » au haut et au bas du formulaire et indiquer qu'il y a des pièces jointes (p. ex. SECRET avec des pièces jointes).
- Yes ☐ No ☒ Oui ☐

**Annex D**  
**EP914-161372/B**

**COMPLETE LIST OF NAMES OF ALL INDIVIDUALS WHO ARE CURRENTLY DIRECTORS OF THE  
OFFEROR**

***NOTE TO OFFERORS***  
***WRITE DIRECTOR'S SURNAMES AND GIVEN NAMES IN BLOCK LETTERS***



Quarterly Usage Report - Annex E  
EP914-161372/B  
GENERAL INSTRUCTIONS

**Introduction**

The Government of Canada (GC) requires the Contractor to provide the following Periodic Usage Report to the Standing Offer (SO) Authority on a quarterly basis.

**Response Due Date**

Your cooperation in returning the completed report by the appropriate date is **MANDATORY**.

Quarter	Period to be Covered (to be revised prior to issuance of Standing Offer)	Due on or before (to be revised prior to issuance of Standing Offer)
1st	April 1 to June 30	July 15
2nd	July 1 to September 30	October 15
3rd	October 1 to December 31	January 15
4th	January 1 to March 31	April 15

**Returning the Completed Report**

Please e-mail the completed report to [amalia.maquiling@tpsgc-pwgsc.gc.ca](mailto:amalia.maquiling@tpsgc-pwgsc.gc.ca)

*Please don't forget to use the title "Quarterly Usage Report" and the reporting period in the subject line of your e-mail. Contractor is encourage to attach worksheet "2", "Information Sheet and Summary" when submitting quarterly usage report.*

**Complete All Questions**

Contractor must complete all applicable portions of the report.

**Currency**

Please state all monetary values in Canadian dollars (CDN).

**Changing the Format**

Contractor must not modify the format of this report. Should you have any suggestions about the format, please forward it by e-mail to [amalia.maquiling@tpsgc-pwgsc.gc.ca](mailto:amalia.maquiling@tpsgc-pwgsc.gc.ca)

**Questions**

Should you need further clarification, please forward your question by e-mail to [amalia.maquiling@tpsgc-pwgsc.gc.ca](mailto:amalia.maquiling@tpsgc-pwgsc.gc.ca)

**Summary of Table**

Field	Description
Call-up number	Unique number for the contract, as identified on page 1 of the contract.
Call-up Amendment number	The number of the call-up amendment, such as: amendment 1, amendment 2, etc.
Issuance date of the Call-up	Date that the Call-up/amendment is issued to the supplier.
Start date	Date the resource/services started engagement
End date	Date the resource/services ended (or will end) engagement/completion date
Project Description	Brief description of the work contracted.
Client Department/Contact Information	Information should include the contact name, e-mail and telephone number
Call-up Value (or amendment value)	The value of the call-up (Applicable Taxes inc), as identified on page 1 of the call-up. Or the increase or decrease value for the amendment
Notes	Indicate any comments or notes, if necessary

**ANNEX E**  
**Quarterly Usage Report**  
EP914-161372/B

SO N <sup>o</sup> : EP914-161372/B					Period to be covered:			
SO Title : Designated Substance and Hazardous Material (DSHM) Removal or Repair					PWGSC SO Authority: Amalia Maquilaging			
Call-up No.	Call-up amend't no.	Issuance date of the Call-up or Amend't (YYYY-MM-DD)	Start date of the Call-up (YYYY-MM-DD)	End date of the Call-up (YYYY-MM-DD)	Project Description	Location/Building Name	Client contact information (name, e-mail and tel.#)	Call-up Value or amend't value (taxes included)
1								\$
2								\$
3								\$
4								\$
5								\$
6								\$
7								\$
8								\$
9								\$
10								\$
11								\$
12								\$
13								\$
14								\$
15								\$
16								\$
17								\$
18								\$
19								\$
20								\$
21								\$
22								\$
23								\$
24								\$
25								\$
26								\$
					Total value of call-up for this quarter (i)			
					Cumulative call-ups for previous periods (ii)			
					Total value of call-up to date = (i) + (ii)			

Prepared by: *(Insert company name and individual's name preparing this report)*

**Part 1 General**

**1.1 SUMMARY**

- .1 Comply with requirements of this Section when performing following work:
  - .1 Installing or removing ceiling tiles that are asbestos-containing material, if the tiles cover an area less than 7.5 square metres and are installed or removed without being broken, cut, drilled, abraded, ground, sanded or vibrated.
  - .2 Removing non-friable asbestos-containing materials, other than ceiling tiles, if the material is installed or removed without being broken, cut, drilled, abraded, ground, sanded or vibrated as described in the Cooling Tower Replacement project.
  - .3 Break, cut, grind, sand, drill, scrape, vibrate or abrade non-friable asbestos containing materials using non-powered hand-held tools, and the material is wetted to control the spread of dust or fibres as described in the Cooling Tower Replacement project.
  - .4 Removing less than one square metre of drywall in which joint-filling compounds that are asbestos containing materials have been used.

**1.2 RELATED REQUIREMENTS**

- .1 Section 01 00 10 – General Instructions
- .2 Section 01 14 25 – Designated Substance Report
- .3 Section 01 35 29.06 - Health and Safety Requirements.

**1.3 REFERENCES**

- .1 Ontario Regulation 278/05- Designated Substances- Asbestos on Construction Projects and in Buildings and Repair Operations- made under the Occupational Health and Safety Act
- .2 Department of Justice Canada (Jus)
  - .1 Canadian Environmental Protection Act, 1999 (CEPA).
- .3 Transport Canada (TC)
  - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).

**1.4 DEFINITION**

- .1 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.
- .2 Amended Water: water with nonionic surfactant wetting agent added to reduce water tension to allow thorough wetting of fibres.

- .3 Asbestos-Containing Materials (ACMs): materials that contain 0.5 per cent or more asbestos by dry weight and are identified under Existing Conditions including fallen materials and settled dust.
- .4 Asbestos Work Area: area where work takes place which will, or may, disturb ACMs.
- .5 Authorized Visitors: Engineer, Consultant or designated representative, and representative of regulatory agencies.
- .6 Competent worker : in relation to specific work, means a worker who:
  - .1 Is qualified because of knowledge, training and experience to perform the work.
  - .2 Is familiar with the provincial, federal laws and with the provisions of the regulations that apply to the work.
  - .3 Has knowledge of all potential or actual danger to health or safety in the work.
- .7 Friable material: means material that:
  - .1 When dry, can be crumbled, pulverized or powdered by hand pressure, or
  - .2 is crumbled, pulverized or powdered.
- .8 Non-Friable Material: material that when dry cannot be crumbled, pulverized or powdered by hand pressure.
- .9 Occupied Area: any area of the building or work site that is outside Asbestos Work Area.
- .10 Polyethylene: polyethylene sheeting or rip-proof polyethylene sheeting with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide protection and isolation.
- .11 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must have appropriate capacity for work.

## **1.5 SUBMITTALS**

- .1 Submit proof satisfactory to Departmental Representative that arrangements have been made to dispose of asbestos-containing waste in accordance with requirements of authority having jurisdiction.
- .2 Submit proof of Contractor's Asbestos Liability Insurance.
- .3 Submit to Departmental Representative necessary permits for transportation and disposal of asbestos-containing waste and proof that asbestos-containing waste has been received and properly disposed.
- .4 Submit proof that all asbestos workers and/or supervisor have received appropriate training and education by a competent person in the hazards of asbestos exposure, good personal hygiene and work practices while working in Asbestos Work Areas, and the use, cleaning and disposal of respirators and protective clothing.
- .5 Submit proof satisfactory to Departmental Representative that employees have respirator fitting and testing. Workers must be fit tested (irritant smoke test) with respirator that is personally issued.

## **1.6 QUALITY ASSURANCE**

- .1 Regulatory Requirements: comply with Federal, Provincial/Territorial, and local requirements pertaining to asbestos, provided that in case of conflict among these

requirements or with these specifications, more stringent requirement applies. Comply with regulations in effect at time Work is performed.

.2 Health and Safety:

.1 Perform construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

.2 Safety Requirements: worker protection.

.1 Protective equipment and clothing to be worn if requested by workers while in Asbestos Work Area include:

.1 Air purifying half-mask respirator with N-100, R-100 or P-100 particulate filter, personally issued to worker and marked as to efficiency and purpose, suitable for protection against asbestos and acceptable to Provincial Authority having jurisdiction if requested by worker. The respirator to be fitted so that there is an effective seal between the respirator and the worker's face, unless the respirator is equipped with a hood or helmet. The respirator to be cleaned, disinfected and inspected after use on each shift, or more often if necessary, when issued for the exclusive use of one worker, or after each use when used by more than one worker.

.2 Disposable-type protective clothing that does not readily retain or permit penetration of asbestos fibres. Protective clothing to be provided by the employer and worn by every worker who enters the work area, and the protective clothing shall consist of a head covering and full body covering that fits snugly at the ankles, wrists and neck, in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing to include suitable footwear, and to be repaired or replaced if torn.

.2 Eating, drinking, chewing, and smoking are not permitted in Asbestos Work Area.

.3 Before leaving Asbestos Work Area, dispose of protective clothing as contaminated waste

.4 Facilities for washing hands and face shall be provided within or close to the Asbestos Work Area.

.5 Ensure that no person required to enter an Asbestos Work Area has facial hair that affects seal between respirator and face.

**1.7 WASTE MANAGEMENT AND DISPOSAL**

.1 Disposal of asbestos waste generated by removal activities must comply with Federal, Provincial, Territorial and Municipal regulations. Dispose of asbestos waste in sealed double thickness 6 ml bags or leak proof drums. Label containers with appropriate warning labels.

.2 Transport containers by approved means to licensed landfill for burial.

**1.8 EXISTING CONDITIONS**

.1 Refer to section 01 14 25 or provided report for information pertaining to ACMs to be handled, removed, or otherwise disturbed and disposed of during this Project.



- .2 Notify Departmental Representative of friable material discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material pending instructions from Departmental Representative.

## **1.9 SCHEDULING**

- .1 Hours of Work: perform work during or outside regular working hours as instructed by project leader.

## **1.10 DEPARTMENTAL REPRESENTATIVE'S INSTRUCTIONS**

- .1 Before beginning Work, provide Departmental Representative satisfactory proof that every worker has had instruction and training in hazards of asbestos exposure, in personal hygiene and work practices, and in use, cleaning, and disposal of respirators and protective clothing.
- .2 Instruction and training related to respirators includes, following minimum requirements:
  - .1 Fitting of equipment.
  - .2 Inspection and maintenance of equipment.
  - .3 Disinfecting of equipment.
  - .4 Limitations of equipment.
- .3 Instruction and training must be provided by a competent, qualified person.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Drop Sheets:
  - .1 Polyethylene: 0.15 mm thick.
  - .2 FR polyethylene: 0.15 mm thick woven fibre reinforced fabric bonded both sides with polyethylene.
- .2 Wetting Agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with water in a concentration to provide thorough wetting of asbestos-containing material.
- .3 Waste Containers: contain waste in two separate containers.
  - .1 Inner container: 0.15 mm thick sealable polyethylene waste bag.
  - .2 Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be sealable metal or fibre type or second 0.15 mm thick sealable polyethylene bag.
  - .3 Labelling requirements: affix pre-printed cautionary asbestos warning in both official languages that is visible when ready for removal to disposal site.
- .4 Slow - drying sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual asbestos fibres.
- .5 Tape: fibreglass - reinforced duct tape suitable for sealing polyethylene under both dry conditions and wet conditions using amended water.

**Part 3 Execution**

**3.1 PROCEDURES**

- .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .2 Before beginning Work, isolate Asbestos Work Area using, minimum, preprinted cautionary asbestos warning signs in both official languages that are visible at access routes to Asbestos Work Area.
  - .1 Remove visible dust from surfaces in the work area where dust is likely to be disturbed during course of work.
  - .2 Use HEPA vacuum or damp cloths where damp cleaning does not create a hazard and is otherwise appropriate.
  - .3 Do not use compressed air to clean up or remove dust from any surface.
- .3 Prevent spread of dust from Asbestos Work Area using measures appropriate to work to be done.
  - .1 Use FR polyethylene drop sheets over flooring such as carpeting that absorbs dust and over flooring in Asbestos Work Area where dust and contamination cannot otherwise be safely contained. Drop sheets are not to be reused.
- .4 Wet materials containing asbestos to be cut, ground, abraded, scraped, drilled, or otherwise disturbed unless wetting creates hazard or causes damage.
  - .1 Use garden reservoir type low - velocity fine - mist sprayer.
  - .2 Perform Work to reduce dust creation to lowest levels practicable.
  - .3 Work will be subject to visual inspection and air monitoring.
  - .4 Contamination of surrounding areas indicated by visual inspection or air monitoring will require complete enclosure and clean-up of affected areas.
- .5 Frequently and at regular intervals during Work and immediately on completion of work:
  - .1 Dust and waste to be cleaned up and removed using a vacuum equipped with a HEPA filter, or by damp mopping or wet sweeping, and placed in a waste container, and
  - .2 Drop sheets to be wetted and placed in a waste container as soon as practicable.
- .6 Cleanup:
  - .1 Place dust and asbestos containing waste in sealed dust-tight waste bags. Treat drop sheets and disposable protective clothing as asbestos waste; wet and fold these items to contain dust, and then place in plastic bags.
  - .2 Clean exterior of each waste-filled bag using damp cloths or HEPA vacuum and place in second clean waste bag immediately prior to removal from Asbestos Work Area.
  - .3 Seal waste bags and remove from site. Dispose of in accordance with requirements of Provincial/Territorial and Federal Authority having jurisdiction. Supervise dumping and ensure that dump operator is fully aware of hazardous nature of material to be dumped and that the appropriate guidelines and regulations for asbestos disposal are followed.
  - .4 Perform final thorough clean-up of Work areas and adjacent areas affected by Work using HEPA vacuum.

Project No.  
Various

Section 02 82 00.01  
ASBESTOS ABATEMENT - MINIMUM PRECAUTIONS  
Page 6

**END OF SECTION**

**Part 1 General**

**1.1 SUMMARY**

- .1 Comply with requirements of this Section when performing following Work:
  - .1 Removing of all or part of a false ceiling to obtain access to a work area, if asbestos containing material is likely lying on the surface of the false ceiling.
  - .2 Removing more than 7.5 square metres of asbestos containing suspended ceiling tiles, as indicated.
  - .3 Removal of asbestos containing material from piping or equipment as indicated.
  - .4 Removal or disturbance of one square metre or less of friable asbestos containing material during the repair, alteration, maintenance or demolition of all or part of machinery or equipment, or of a building.
  - .5 Enclosure of friable asbestos containing material as indicated.
  - .6 Application of tape or sealant or other covering to pipe and boiler insulation containing asbestos.
  - .7 Removing non-friable asbestos containing materials by breaking, cutting, drilling, abrading, grounding, sanding or vibrating if:
    - .1 The material is not wetted to control the spread of dust or fibres, and
    - .2 The work is done only by means of non-powered hand-held tools.
  - .8 Removing non-friable asbestos containing materials by breaking, cutting, drilling, abrading, grounding, sanding or vibrating if the work is done by means of power tools that are attached to dust-collecting devices equipped with HEPA filters.
  - .9 Removing more than one square metre of drywall in which joint-filling compounds that are asbestos containing materials have been used.
  - .10 Removing of asbestos containing material from a pipe, duct or similar structure using a glove bag.
  - .11 Cleaning or removing filters used in an air handling unit in a building that has sprayed-on asbestos containing fireproofing.

**1.2 SECTION INCLUDES**

- .1 Requirements and procedures for asbestos abatement of asbestos containing materials of the type described within.

**1.3 RELATED REQUIREMENTS**

- .1 Section 01 00 10 – General Instructions
- .2 Section 01 35 29.06 - Health and Safety Requirements
- .3 Section 01 14 25 – Designated Substance Report.

**1.4 REFERENCES**

- .1 Ontario Regulation 278/05- Designated Substances- Asbestos on Construction Projects and in Buildings and Repair Operations- made under the Occupational Health and Safety Act

- .2 Transport Canada (TC)
  - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .3 National Joint Council
  - .1 Occupational Health and Safety Directive Part XI, Section 11.6 Asbestos Management.
- .4 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-1.205-94, Sealer for Application to Asbestos-Fibre-Releasing Materials.
- .5 Canadian Standards Association (CSA International)
- .6 Ontario Environmental Protection Act Ontario Regulation 347/90, as amended by O. Reg. 337/09. (General-Waste Management).
- .7 Underwriters' Laboratories of Canada (ULC)
- .8 Canada Labour Code Part II, Canada Occupational Safety and Health Regulation Part X, Dangerous Substances
- .9 CSA Z94.4-02 Selection, Use and Care of Respirators
- .10 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .11 Department of Justice Canada
  - .1 Canadian Environmental Protection Act (CEPA), 1999.

**1.5****DEFINITIONS**

- .1 Amended Water: water with non-ionic surfactant wetting agent added to reduce water tension to allow wetting of fibres.
- .2 Asbestos Containing Materials (ACMs): materials that contain 0.5 per cent or more asbestos by dry weight and are identified under Existing Conditions including fallen materials and settled dust.
- .3 Asbestos Work Area: area where work takes place which will, or may disturb ACMs.
- .4 Authorized Visitors: Engineer, or designated representative, and representative of regulatory agencies.
- .5 Competent worker : in relation to specific work, means a worker who:
  - .1 Is qualified because of knowledge, training and experience to perform the work.
  - .2 Is familiar with the provincial laws and with the provisions of the regulations that apply to the work.

- .3 Has knowledge of all potential or actual danger to health or safety in the work.
- .6 Curtained doorway: arrangement of closures to allow ingress and egress from one room to another while permitting minimal air movement between rooms, typically constructed as follows:
  - .1 Place two overlapping sheets of polyethylene over existing or temporarily framed doorway, secure each along top of doorway, secure vertical edge of one sheet along one vertical side of doorway, and secure vertical edge of other sheet along opposite vertical side of doorway.
  - .2 Reinforce free edges of polyethylene with duct tape and weight bottom edge to ensure proper closing.
  - .3 Overlap each polyethylene sheet at openings not less than 1.5 m on each side.
- .7 Friable Materials: material that when dry can be crumbled, pulverized or powdered by hand pressure and includes such material that is crumbled, pulverized or powdered
- .8 Glove Bag: prefabricated glove bag as follows:
  - .1 Minimum thickness 0.25 mm (10 mil) polyvinyl-chloride bag.
  - .2 Integral 0.25 mm (10 mil) thick polyvinyl-chloride gloves and elastic ports.
  - .3 Equipped with reversible double pull double throw zipper on top and at approximately mid-section of the bag.
  - .4 Straps for sealing ends around pipe.
- .9 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining fibres greater than 0.3 microns in any dimension at 99.97% efficiency.
- .10 Non-Friable Material: material that when dry cannot be crumbled, pulverized or powdered by hand pressure.
- .11 Occupied Area: any area of building or work site that is outside Asbestos Work Area.
- .12 Polyethylene: polyethylene sheeting or rip-proof polyethylene sheeting with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide protection and isolation.
- .13 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must have appropriate capacity for scope of work.

#### **1.6 SUBMITTALS**

- .1 Submit proof satisfactory to Departmental Representative that suitable arrangements have been made to dispose of asbestos containing waste in accordance with requirements of authority having jurisdiction.
- .2 Submit Provincial requirements for Notice of Project Form.
- .3 Submit proof of Contractor's Asbestos Liability Insurance.

- .4 Submit to Departmental Representative necessary permits for transportation and disposal of asbestos containing waste and proof that asbestos containing waste has been received and properly disposed.
- .5 Submit proof satisfactory to Departmental Representative that all asbestos workers have received appropriate training and education by a competent person in the hazards of asbestos exposure, good personal hygiene, entry and exit from Asbestos Work Area, aspects of work procedures and protective measures while working in Asbestos Work Areas, and the use, cleaning and disposal of respirators and protective clothing. Submit proof of attendance in form of certificate.
- .6 Submit proof that supervisory personnel have attended asbestos abatement course, of not less than two days duration, approved by Departmental Representative. There must be a minimum of one supervisor for every ten workers.
- .7 Submit Worker's Compensation Board status and transcription of insurance.
- .8 Submit documentation including test results, fire and flammability data, and Material Safety Data Sheets (MSDS) for chemicals or materials including:
  - .1 Encapsulants;
  - .2 Amended water;
  - .3 Slow drying sealer.
- .9 Submit proof satisfactory to Departmental Representative that employees have respirator fitting and testing in accordance with CSA Z94.4-02 Selection, Use and Care of Respirators. Workers must be fit tested (irritant smoke test) with respirator that is personally issued.

## **1.7 QUALITY ASSURANCE**

- .1 Regulatory Requirements: comply with Federal, Provincial and local requirements pertaining to asbestos, provided that in case of conflict among these requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at the time work is performed.
- .2 Health and Safety:
  - .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
  - .2 Safety Requirements: worker and visitor protection.
    - .1 Protective equipment and clothing to be worn by workers while in Asbestos Work Area include:
      - .1 Air purifying half-mask respirator with N-100, R-100 or P-100 particulate filter, personally issued to worker and marked as to efficiency and purpose, suitable for protection against asbestos and acceptable to Provincial Authority having jurisdiction. The respirator to be fitted so that there is an effective seal between the respirator and the worker's face, unless the respirator is equipped with a hood or helmet.
      - .2 Disposable type protective clothing that does not readily retain or permit penetration of asbestos fibres. Protective clothing to be

provided by the employer and worn by every worker who enters the work area, and the protective clothing to consist of a head covering and full body covering that fits snugly at the ankles, wrists and neck, in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing. It includes suitable footwear, and it to be repaired or replaced if torn.

- .3 Eating, drinking, chewing, and smoking are not permitted in Asbestos Work Area.
- .4 Before leaving Asbestos Work Area, the worker can decontaminate his or her protective clothing by using a vacuum equipped with a HEPA filter, or by damp wiping, before removing the protective clothing, or, if the protective clothing will not be reused, place it in a container for dust and waste. The container to be dust tight, suitable for asbestos waste, impervious to asbestos, identified as asbestos waste, cleaned with a damp cloth or a vacuum equipped with a HEPA filter immediately before removal from the work area, and removed from the work area frequently and at regular intervals.
- .5 Ensure workers wash hands and face when leaving Asbestos Work Area. Facilities for washing shall be provided within or close to the asbestos work area.
- .6 Ensure that no person required to enter an Asbestos Work Area has facial hair that affects seal between respirator and face.
- .7 Visitor Protection:
  - .1 Provide protective clothing and approved respirators to Authorized Visitors to work areas.
  - .2 Instruct Authorized Visitors in the use of protective clothing, respirators and procedures.
  - .3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from Asbestos Work Area.

## **1.8 WASTE MANAGEMENT AND DISPOSAL**

- .1 Disposal of asbestos waste generated by removal activities must comply with Federal, Provincial and Municipal regulations. Dispose of asbestos waste in sealed double thickness 6 ml bags or leak proof drums. Label containers with appropriate warning labels.
- .2 Provide manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial.

## **1.9 EXISTING CONDITIONS**

- .1 Refer to section 01 14 25 or provided report for information pertaining to ACMs to be handled, removed, or otherwise disturbed and disposed of during this Project.
- .2 Notify Departmental Representative of friable material discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material until instructed by Departmental Representative.

## **1.10 SCHEDULING**

- .1 Hours of Work: perform work during or outside regular working hours as instructed by project leader.



**1.11 DEPARTMENTAL REPRESENTATIVE'S INSTRUCTIONS**

- .1 Before beginning Work, provide Departmental Representative satisfactory proof that every worker has had instruction and training in hazards of asbestos exposure, in personal hygiene and work practices, in use of glove bag procedures, and in use, cleaning, and disposal of respirators and protective clothing.
- .2 Instruction and training related to respirators includes, at minimum:
  - .1 Fitting of equipment.
  - .2 Inspection and maintenance of equipment.
  - .3 Disinfecting of equipment.
  - .4 Limitations of equipment.
- .3 Instruction and training must be provided by competent, qualified person as defined by O. Reg. 213/91 as amended by O. Reg. 628/05 – Construction Projects.
- .4 Supervisory personnel to complete required training.

**Part 2 Products**

**2.1 MATERIALS**

- .1 Drop and Enclosure Sheets:
  - .1 Polyethylene: 0.15 mm thick.
  - .2 FR polyethylene: 0.15 mm thick woven fibre reinforced fabric bonded both sides with polyethylene.
- .2 Wetting Agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with water in concentration to provide thorough wetting of asbestos containing material.
- .3 Waste Containers: contain waste in two separate containers.
  - .1 Inner container: 0.15 mm thick sealable polyethylene bag or where glove bag method is used, glove bag itself.
  - .2 Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be a second 0.15 mm thick sealable polyethylene bag.
  - .3 Labelling requirements: affix preprinted cautionary asbestos warning, in both official languages, that is visible when ready for removal to disposal site.
- .4 Glove bag:
  - .1 Acceptable materials: safe-T-Strip products in configuration suitable for Work, or Alternative material approved by addendum during tendering period in accordance with Instructions to Tenderers.
  - .2 The glove bag to be equipped with:
    - .1 Sleeves and gloves that are permanently sealed to the body of the bag to allow the worker to access and deal with the insulation and maintain a sealed enclosure throughout the work period.

- .2 Valves or openings to allow insertion of a vacuum hose and the nozzle of a water sprayer while maintaining the seal to the pipe, duct or similar structure.
- .3 A tool pouch with a drain.
- .4 A seamless bottom and a means of sealing off the lower portion of the bag.
- .5 A high strength double throw zipper and removable straps, if the bag is to be moved during the removal operation.
- .5 Tape: tape suitable for sealing polyethylene to surfaces under both dry and wet conditions using amended water.
- .6 Protective Coveralls: disposable full body polyolefin coveralls complete with hoods which do not permit penetration of asbestos fibres.
- .7 Slow - drying sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual asbestos fibres.
- .1 Sealer: flame spread and smoke developed rating less than 50 and be compatible with new fireproofing.

### **Part 3 Execution**

#### **3.1 SUPERVISION**

- .1 Minimum of one Supervisor for every ten workers is required.
- .2 Approved Supervisor must remain within Asbestos Work Area during disturbance, removal, or other handling of asbestos-containing materials.

#### **3.2 PROCEDURES**

- .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .2 Before beginning Work, at each access to Asbestos Work Area, install warning signs in both official languages in upper case 'Helvetica Medium' letters reading as follows, where number in parentheses indicates font size to be used: 'CAUTION ASBESTOS HAZARD AREA (25 mm) / NO UNAUTHORIZED ENTRY (19 mm) / WEAR ASSIGNED PROTECTIVE EQUIPMENT (19 mm) / BREATHING ASBESTOS DUST MAY CAUSE SERIOUS BODILY HARM (7 mm)'.
- .3 Before beginning Work remove visible dust from surfaces in work area where dust is likely to be disturbed during course of work.
  - .1 Use HEPA vacuum or damp cloths where damp cleaning does not create hazard and is otherwise appropriate.
  - .2 Do not use compressed air to clean up or remove dust from any surface.
- .4 Prevent spread of dust from Asbestos Work Area using measures appropriate to work to be done.

- .1 Use FR polyethylene drop sheets over flooring such as carpeting that absorbs dust and over flooring in work areas where dust or contamination cannot otherwise be safely contained.
  - .2 When removing suspended ceilings and walls themselves do not enclose work area and when removing asbestos containing material from piping or equipment and "glove bag" method is not used erect enclosure of polyethylene sheeting around work area, shut off mechanical ventilation system serving work area and seal ventilation ducts to and from work area.
  - .3 **Glove Bag** Use FR polyethylene drop sheets to cover surfaces below the work area.
  - .4 **Glove Bag** The work area shall be separated from the rest of the workplace by walls, barricades, fencing, or enclosure of polyethylene sheeting
  - .5 **Glove Bag** Shut off mechanical ventilation system serving work area and seal ventilation ducts to and from work area.
  - .6 Erect enclosure of polyethylene sheeting around work area, shut off mechanical ventilation system serving work area and seal ventilation ducts to and from work area. The enclosure shall be as air tight as conditions permit, and will include the provision of a double overlapping flap at the entrance. The floor of the work area shall be a layer of 0.15 mm polyethylene sealed to the plastic walls of the enclosure.
  - .7 Establish negative pressure in the polyethylene enclosure by inserting HEPA vacuum hose into enclosure and operate continuously at all times while asbestos containing materials may be disturbed.
  - .8 **Glove Bag If enclosure permits, establish negative pressure in the polyethylene enclosure by inserting HEPA vacuum hose into enclosure and operate continuously at all times while asbestos containing materials may be disturbed**
- .5 Before removing suspended ceilings, remove friable material on upper surfaces using HEPA vacuum equipment.
- .1 Remove and clean surfaces of ceiling panels using HEPA vacuum, wrap clean panels in 0.10 mm thick polyethylene, and store in building as directed by Departmental Representative.
  - .2 Clean "T" grid suspension system, disconnect, wrap in 0.10 mm thick polyethylene, and store in building as directed by Engineer.
- .6 Remove loose material by HEPA vacuum; thoroughly wet friable material containing asbestos to be removed or disturbed before and during Work unless wetting creates hazard or causes damage.
- .1 Use garden reservoir type low - velocity sprayer or airless spray equipment capable of producing mist or fine spray.
  - .2 Perform Work in a manner to reduce dust creation to lowest levels practicable.
- .7 Pipe Insulation Removal Using Glove Bag:
- .1 A glove bag not to be used to remove insulation from a pipe, duct or similar structure if:
    - .1 It may not be possible to maintain a proper seal for any reason including, without limitation:

- .1 The condition of the insulation.
    - .2 The temperature of the pipe, duct or similar structure.
  - .2 The bag could become damaged for any reason including, without limitation.
    - .1 The type of jacketing.
    - .2 The temperature of the pipe, duct or similar structure.
- .2 Upon installation of the glove bag, inspect bag for any damage or defects. If any damage or defects are found, the glove bag is to be repaired or replaced. The glove bag is to be inspected at regular intervals for damage and defects, and repair or replaced, as appropriately. The asbestos containing contents of the damaged or defective glove bag found during removal are to be wetted and the glove bag and its contents are to be removed and disposed of in an appropriate waste disposal container. Any damaged or defective glove bags are not be reused.
- .3 Place tools necessary to remove insulation in tool pouch. Wrap bag around pipe and close zippers. Seal bag to pipe with cloth straps.
- .4 Place hands in gloves and use necessary tools to remove insulation. Arrange insulation in bag to obtain full capacity of bag.
- .5 Insert nozzle of garden reservoir type sprayer into bag through valve and wash down pipe and interior of bag thoroughly. Wet surface of insulation in lower section of bag.
- .6 To remove bag after completion of stripping, wash top section and tools thoroughly. Remove air from top section through elasticized valve using a HEPA vacuum. Pull polyethylene waste container over glove bag before removing from pipe. Release one strap and remove freshly washed tools. Place tools in water. Remove second strap and zipper. Fold over into waste container and seal.
- .7 After removal of bag ensure that pipe is free of residue. Remove residue using HEPA vacuum or wet cloths. Ensure that surfaces are free of sludge which after drying could release asbestos dust into atmosphere. Seal exposed surfaces of pipe and ends of insulation with slow drying sealer to seal in any residual fibres.
- .8 Upon completion of Work shift, cover exposed ends of remaining pipe insulation with polyethylene taped in place.
- .8 Work is subject to visual inspection and air monitoring. Contamination of surrounding areas indicated by visual inspection or air monitoring will require complete enclosure and clean-up of affected areas.
- .9 Cleanup:
  - .1 Frequently during Work and immediately after completion of work, clean up dust and asbestos containing waste using HEPA vacuum or by damp mopping.
  - .2 Place dust and asbestos containing waste in sealed dust tight waste bags. Treat drop sheets and disposable protective clothing as asbestos waste and wet and fold to contain dust and then place in waste bags.
  - .3 Immediately before their removal from Asbestos Work Area and disposal, clean each filled waste bag using damp cloths or HEPA vacuum and place in second clean waste bag.
  - .4 Seal and remove double bagged waste from site. Dispose of in accordance with requirements of Provincial and Federal authority having jurisdiction. Supervise dumping and ensure that dump operator is fully aware of hazardous nature of

material to be dumped and those guidelines and regulations for asbestos disposal are followed.

- .5 Perform final thorough clean-up of Asbestos Work Areas and adjacent areas affected by Work using HEPA vacuum.

### **3.3 AIR MONITORING**

- .1 From beginning of Work until completion of cleaning operations, Departmental Representative may take air samples on daily basis outside of Asbestos Work Area enclosure in accordance with Provincial Occupational Health and Safety Regulations and PWGSC requirements.
  - .1 Contractor will be responsible for monitoring inside enclosure in accordance with applicable Provincial Occupational Health and Safety Regulations.
- .2 If air monitoring shows that areas outside Asbestos Work Area enclosure are contaminated, enclose, maintain and clean these areas in same manner as that applicable to Asbestos Work Area.
- .3 Ensure that respiratory safety factors are not exceeded.
- .4 During the course of Work, Departmental Representative to measure fibre content of air outside Work areas by means of air samples analyzed by Phase Contrast Microscopy (PCM).
  - .1 Stop Work when PCM measurements exceed 0.05 f/cc and correct procedures.

**END OF SECTION**

**Part 1 General**

**1.1 SUMMARY**

- .1 Comply with requirements of this Section when performing following Work:
  - .1 Removal or disturbance as specified of more than one square metre of friable asbestos containing material during the repair, alteration, maintenance or demolition of a building or any machinery or equipment located at site.
  - .2 The spray application of a sealant to friable asbestos containing material.
  - .3 Cleaning or removing air handling equipment, including rigid ducting but not including filters, in a building that has asbestos containing sprayed fireproofing.
  - .4 Repairing, altering or demolishing all or part of a kiln, metallurgical furnace or similar structure that is made in part of refractory materials that are asbestos containing materials.
  - .5 Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos containing material, if the work is done by means of power tools that are not attached to dust-collecting devices equipped with HEPA filters.
  - .6 Repairing, altering or demolishing all or part of any building in which asbestos is or was used in the manufacture of products.

**1.2 SECTION INCLUDES**

- .1 Requirements and procedures for asbestos abatement of asbestos containing materials of the type described within.

**1.3 RELATED REQUIREMENTS**

- .1 Section 01 00 10 – General Instructions.
- .2 Section 01 35 29.06 - Health and Safety Requirements.
- .3 Section 01 14 25 – Designated Substance Report

**1.4 REFERENCES**

- .1 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-1.205-94, Sealer for Application to Asbestos-Fibre-Releasing Materials.
- .2 National Joint Council
  - .1 Occupational Health and Safety Directive Part XI, Section 11.6 Asbestos Management.
- .3 Transport Canada
  - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).

- .4 Canadian Standards Association (CSA International)
- .5 Underwriters' Laboratories of Canada (ULC)
- .6 Ontario Occupational Health and Safety Act
  - .1 Ontario Regulation 278/05: Designated Substances - Asbestos on Construction Projects and in Buildings and Repair Operations
- .7 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .8 Department of Justice Canada
  - .1 Canadian Environmental Protection Act (CEPA), 1999.
- .9 Ontario Environmental Protection Act
  - .1 Ontario Regulation 347/90, as amended: General - Waste Management.
- .10 CSA Z94.4-02 Selection, Use and Care of Respirators

## 1.5 DEFINITIONS

- .1 Airlock: system for permitting ingress or egress without permitting air movement between contaminated area and uncontaminated area, typically consisting of two curtained doorways at least 2 m apart.
- .2 Amended Water: water with a non-ionic surfactant wetting agent added to reduce water tension to allow wetting of fibres.
- .3 Asbestos Containing Materials (ACMs): materials that contain 0.5 per cent (0.1 percent in Quebec) or more asbestos by dry weight and are identified under Existing Conditions including fallen materials and settled dust.
- .4 Asbestos Work Areas: area where work takes place which will, or may disturb ACMs.
- .5 Authorized Visitors: Departmental Representatives, Engineers, Consultants or designated representatives, and representatives of regulatory agencies.
- .6 Competent worker: in relation to specific work, means a worker who:
  - .1 Is qualified because of knowledge, training and experience to perform the work.
  - .2 Is familiar with the provincial and federal laws and with the provisions of the regulations that apply to the work.
  - .3 Has knowledge of all potential or actual danger to health or safety in the work.
- .7 Curtained doorway: arrangement of closures to allow ingress and egress from one room to another while permitting minimal air movement between rooms, typically constructed as follows:
  - .1 Place two overlapping sheets of polyethylene over existing or temporarily framed doorway, secure each along top of doorway, secure vertical edge of one sheet

- along one vertical side of doorway, and secure vertical edge of other sheet along opposite vertical side of doorway.
- .2 Reinforce free edges of polyethylene with duct tape and weight bottom edge to ensure proper closing.
  - .3 Overlap each polyethylene sheet at openings not less than 1.5 m on each side.
- .8 DOP Test: testing method used to determine integrity of Negative Pressure unit using dioctyl phthalate (DOP) HEPA-filter leak test.
- .9 Friable Materials: material that when dry can be crumbled, pulverized or powdered by hand pressure and includes such material that is crumbled, pulverized or powdered.
- .10 Glove Bag: prefabricated glove bag as follows:
- .1 Minimum thickness 0.25 mm (10 mil) polyvinyl-chloride bag.
  - .2 Integral 0.25 mm (10 mil) thick polyvinyl-chloride gloves and elastic ports.
  - .3 Equipped with reversible double pull double throw zipper on top and at approximately mid-section of the bag.
  - .4 Straps for sealing ends around pipe.
- .11 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with a filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.
- .12 Negative pressure: system that extracts air directly from work area, filters such extracted air through High Efficiency Particulate Air filtering system, and discharges this air directly outside work area to exterior of building.
- .1 System to maintain minimum pressure differential of 5 Pa relative to adjacent areas outside of work areas, be equipped with alarm to warn of system breakdown, and be equipped with instrument to continuously monitor and automatically record pressure differences.
- .13 Non-Friable Materials: material that when dry cannot be crumbled, pulverized or powdered by hand pressure.
- .14 Occupied Areas: any area of building or work site that is outside Asbestos Work Area.
- .15 Polyethylene sheeting sealed with tape: polyethylene sheeting of type and thickness specified sealed with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide continuous polyethylene membrane to protect underlying surfaces from water damage or damage by sealants, and to prevent escape of asbestos fibres through sheeting into clean area.
- .16 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must be appropriate capacity for scope of work.

## 1.6 SUBMITTALS

- .1 Before beginning work:
  - .1 Obtain from appropriate agency and submit to Departmental Representative necessary permits for transportation and disposal of asbestos waste. Ensure that



- dump operator is fully aware of hazardous nature of material being dumped, and proper methods of disposal. Submit proof satisfactory to Departmental Representative that suitable arrangements have been made to receive and properly dispose of asbestos waste.
- .2 Submit proof satisfactory to Departmental Representative that all asbestos workers have received appropriate training and education by a competent person on hazards of asbestos exposure, good personal hygiene, entry and exit from Asbestos Work Area, aspects of work procedures and protective measures while working in Asbestos Work Areas, and the use, cleaning and disposal of respirators and protective clothing. Submit proof of attendance in form of certificate.
  - .3 Ensure supervisory personnel have attended asbestos abatement course, of not less than two days duration, approved by Departmental Representative. Submit proof of attendance in form of certificate. Minimum of one Supervisor for every ten workers.
  - .4 Submit layout of proposed enclosures and decontamination facilities to Departmental Representative for review.
  - .5 Submit documentation including test results for sealer proposed for use.
  - .6 Submit Provincial or local requirements for Notice of Project form.
  - .7 Submit proof of Contractor's Asbestos Liability Insurance.
  - .8 Submit proof satisfactory to Departmental Representative that employees have respirator fitting and testing in accordance with CSA Z94.4-02 Selection, Use and Care of Respirators. Workers must be fit-tested (irritant smoke test) with the respirator that is personally issued.
  - .9 Submit Workplace Safety and Insurance Board (WSIB) Board status and transcription of insurance.
  - .10 Submit documentation including DOP test results for negative air units
  - .11 Submit proposed schedule for asbestos removal work areas
  - .12 Submit documentation including test results, fire and flammability data, and Material Safety Data Sheets (MSDS) for chemicals or materials including but not limited to following:
    - .1 Encapsulants.
    - .2 Amended water.
    - .3 Slow drying sealer.

## **1.7 WORKER PROTECTION**

- .1 Regulatory Requirements: comply with Federal, Provincial and local requirements pertaining to asbestos, provided that in case of conflict among those requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at time work is performed.
- .2 Health and Safety:
  - .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
  - .2 Safety Requirements: worker and visitor protection.
    - .1 Protective equipment and clothing to be worn by workers while in Asbestos Work Area includes:

- .1 Air purifying full face-mask respirator, or Powered air purifying respirator (PAPR) or Supplied air respirator with N-100, R-100 or P-100 particulate filter, personally issued to worker and marked as to efficiency and purpose, suitable for protection against asbestos and acceptable to Provincial Authority having jurisdiction. The respirator to be fitted so that there is an effective seal between the respirator and the worker's face, unless the respirator is equipped with a hood or helmet. The respirator to be cleaned, disinfected and inspected after use on each shift, or more often if necessary, when issued for the exclusive use of one worker, or after each use when used by more than one worker. The respirator to have damaged or deteriorated parts replaced prior to being used by a worker; and, when not in use, to be stored in a convenient, clean and sanitary location. The employer to establish written procedures regarding the selection, use and care of respirators, and a copy of the procedures to be provided to and reviewed with each worker who is required to wear a respirator. A worker not to be assigned to an operation requiring the use of a respirator unless he or she is physically able to perform the operation while using the respirator.
- .2 Disposable type protective clothing that does not readily retain or permit penetration of asbestos fibres. Protective clothing to be provided by the employer and worn by every worker who enters the work area, and the protective clothing to consist of a head covering and full body covering that fits snugly at the ankles, wrists and neck, in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing. It includes suitable footwear, and it to be repaired or replaced if torn. Requirements for each worker:
  - .1 Remove street clothes in clean change room and put on respirator with new filters or reusable filters that have been tested as satisfactory, clean coveralls and head covers before entering Equipment and Access Rooms or Asbestos Work Area. Store street clothes, uncontaminated footwear, towels, and similar uncontaminated articles in clean change room.
  - .2 Remove gross contamination from clothing before leaving work area then proceed to Equipment and Access Room and remove clothing except respirators. Place contaminated work suits in receptacles for disposal with other asbestos - contaminated materials. Leave reusable items except respirator in Equipment and Access Room. Still wearing the respirator proceed naked to showers. Using soap and water wash body and hair thoroughly. Clean outside of respirator with soap and water while showering; remove respirator; remove filters and wet them and dispose of filters in container provided for purpose; and wash and rinse inside of respirator. When not in use in work area, store work footwear in Equipment and Access Room. Upon completion of asbestos abatement, dispose of footwear as contaminated

- waste or clean thoroughly inside and out using soap and water before removing from work area or from Equipment and Access Room.
- .3 After showering and drying off, proceed to clean change room and dress in street clothes at end of each day's work, or in clean coveralls before eating, smoking, or drinking. If re-entering work area, follow procedures outlined in paragraphs above.
- .4 Enter unloading room from outside dressed in clean coveralls to remove waste containers and equipment from Holding Room of Container and Equipment Decontamination Enclosure system. Workers must not use this system as means to leave or enter work area.
- .2 Eating, drinking, chewing, and smoking are not permitted in Asbestos Work Area.
- .3 Ensure workers are fully protected with respirators and protective clothing during preparation of system of enclosures prior to commencing actual asbestos abatement.
- .4 Provide and post in Clean Change Room and in Equipment and Access Room the procedures described in this Section, in both official languages.
- .5 Ensure that no person required to enter an Asbestos Work Area has facial hair that affects seal between respirator and face.
- .6 Visitor Protection:
  - .1 Provide protective clothing and approved respirators to Authorized Visitors to work areas.
  - .2 Instruct Authorized Visitors in the use of protective clothing, respirators and procedures.
  - .3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from Asbestos Work Area.

## **1.8 WASTE MANAGEMENT AND DISPOSAL**

- .1 Disposal of asbestos waste generated by removal activities must comply with Federal, Provincial, and Municipal regulations. Dispose of asbestos waste in sealed double thickness 6 ml bags or leak proof drums. Label containers with appropriate warning labels.
- .2 Provide manifests describing and listing waste created. Transport containers by approved means to licenced landfill for burial.

## **1.9 EXISTING CONDITIONS**

- .1 Refer to section 01 14 25 or provided report for information pertaining to ACMs to be handled, removed, or otherwise disturbed and disposed of during this Project.
- .2 Notify Departmental Representative of suspect asbestos containing material discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material until instructed by Departmental Representative.

**1.10 SCHEDULING**

- .1 Not later than two (2) days before beginning Work on this Project notify following in writing:
  - .1 Provincial Department of Labour.
  - .2 Disposal Authority.
- .2 Inform sub-trades of presence of asbestos containing materials identified in Existing Conditions.
- .3 Hours of Work: perform work during or outside regular working hours as instructed by project leader.
- .4 Submit to Departmental Representative copy of notifications prior to start of Work

**1.11 PERSONNEL TRAINING INSTRUCTIONS**

- .1 Before beginning Work, provide to Departmental Representative satisfactory proof that every worker has had instruction and training in hazards of asbestos exposure, in personal hygiene including dress and showers, in entry and exit from Asbestos Work Area, in aspects of work procedures including glove bag procedures, and in use, cleaning, and disposal of respirators and protective clothing.
- .2 Instruction and training related to respirators includes, at minimum:
  - .1 Proper fitting of equipment.
  - .2 Inspection and maintenance of equipment.
  - .3 Disinfecting of equipment.
  - .4 Limitations of equipment.
- .3 Instruction and training must be provided by a competent person as defined by O. Reg. 213/91 as amended by O. Reg. 628/05 – Construction Projects.
- .4 Supervisory personnel to complete required training.

**Part 2 Products**

**2.1 MATERIALS**

- .1 Polyethylene: minimum 0.15 mm thick unless otherwise specified; in sheet size to minimize joints.
- .2 FR polyethylene: minimum 0.15 mm thick, woven fibre reinforced fabric bonded both sides with polyethylene.
- .3 Tape: fibreglass - reinforced duct tape suitable for sealing polyethylene under both dry conditions and wet conditions using amended water.
- .4 Wetting agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether, or other material approved by Departmental Representative, mixed with water in concentration to provide adequate penetration and wetting of asbestos containing material.

- .5 Waste Containers: contain waste in two separate containers.
  - .1 Inner container: 0.15 mm thick sealable polyethylene bag or where glove bag method is used, glove bag itself.
  - .2 Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be sealable metal or fibre type or second 0.15 mm thick sealable polyethylene bag.
  - .3 Labelling requirements: affix preprinted cautionary asbestos warning, in both official languages, that is visible when ready for removal to disposal site. Label containers in accordance with Asbestos Regulations 29 CFR 1910.1001. Label in both official languages.
- .6 Glove bag:
  - .1 Acceptable materials: safe-T-Strip products in configuration suitable for Work, or Alternative material approved by addendum during tendering period in accordance with Instructions to Tenderers.
  - .2 The glove bag to be equipped with:
    - .1 Sleeves and gloves that are permanently sealed to the body of the bag to allow the worker to access and deal with the insulation and maintain a sealed enclosure throughout the work period.
    - .2 Valves or openings to allow insertion of a vacuum hose and the nozzle of a water sprayer while maintaining the seal to the pipe, duct or similar structure.
    - .3 A tool pouch with a drain.
    - .4 A seamless bottom and a means of sealing off the lower portion of the bag.
    - .5 A high strength double throw zipper and removable straps, if the bag is to be moved during the removal operation.
- .7 Tape: tape suitable for sealing polyethylene to surfaces under both dry and wet conditions using amended water.
- .8 Slow - drying sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual asbestos fibres.
- .9 Sealer: flame spread and smoke developed rating less than 50, and be compatible with new fireproofing.
- .10 Ground Fault Panel: electrical panel equipped with ground fault circuit interrupters of sufficient capacity to power all electrical equipment and lights in work area. All interrupters to have 3 mA ground fault protection. Panel to be complete with all necessary accessories including ground fault interrupter lights, test switch to ensure unit is working, and reset switch. Install by licensed electrician
- .11 HEPA Filter: A high efficiency particulate aerosol filter that is at least 99.97% efficient in collecting a 0.3 micron aerosol. Each filter should be individually tested and certified to have an efficiency of not less than 99.97 percent when challenged with 0.3 micron dioctylphthalate (DOP) particles. DOP test must be conducted immediately prior to commencement of work and certificate presented to Departmental Representative.

- .12 Sprayed fireproofing: ULC labelled and listed asbestos-free cementitious or mineral fibre to provide degree of fire or thermal protection required.
- .13 Protective Coveralls: disposable full body polyolefin coveralls complete with hoods which do not permit penetration of asbestos fibres.

### Part 3 Execution

#### 3.1 PREPARATION

- .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .2 Work Areas:
  - .1 Shut off and isolate air handling and ventilation systems to prevent fibre dispersal to other building areas during work phase. Conduct smoke tests to ensure that duct work is airtight. Seal and caulk joints and seams of active return air ducts within Asbestos Work Area.
  - .2 Preclean moveable furniture and carpeting within proposed work areas using HEPA vacuum and remove from work areas to temporary location.
  - .3 Preclean fixed casework, plant, and equipment within proposed work areas, using HEPA vacuum and cover with polyethylene sheeting sealed with tape.
  - .4 Clean proposed work area using, where practicable, HEPA vacuum cleaning equipment. If not practicable, use wet cleaning method. Do not use methods that raise dust, such as dry sweeping, or vacuuming using other than HEPA vacuum equipment.
  - .5 The spread of dust from the work area to be prevented by:
    - .1 Using enclosures of polyethylene or other suitable material that is impervious to asbestos (including, if the enclosure material is opaque, one or more transparent window areas to allow observation of the entire work area from outside the enclosure), if the work area is not enclosed by walls.
    - .2 Using curtains of polyethylene sheeting or other suitable material that is impervious to asbestos, fitted on each side of each entrance or exit from the work area.
  - .6 Put negative pressure system in operation and operate continuously from time first polyethylene is installed to seal openings until final completion of work including final cleanup. **Provide sufficient negative air pressure to exchange a volume of air equivalent to that of the Asbestos Work Area a minimum of every 20 minutes.** Provide continuous monitoring of pressure difference using automatic recording instrument. The system to maintain a negative air pressure of 5 Pa of water, relative to the area outside the enclosed area. The system to be inspected and maintained by a competent person prior each use to ensure that there is no air leakage, and if the filter is found to be damaged or defective, it to be replaced before the ventilation system is used.
  - .7 **Leak test, using DOP method where negative pressure units discharge into Occupied Areas. DOP test must be performed for the specified project.**
  - .8 Seal off openings such as corridors, doorways, windows, skylights, ducts, grilles, and diffusers, with polyethylene sheeting sealed with tape.

- .9 Cover floor and wall surfaces with polyethylene sheeting sealed with tape. Use two layers of FR polyethylene on floors. Cover floors first so that polyethylene extends at least 300 mm up walls then cover walls to overlap floor sheeting.
- .10 Build airlocks at entrances to and exits from work areas so that work areas are always closed off by one curtained doorway when workers enter or exit.
- .11 At each access to work areas install warning signs in both official languages in upper case "Helvetica Medium" letters reading as follows where number in parentheses indicates font size to be used: "CAUTION ASBESTOS HAZARD AREA (25 mm) NO UNAUTHORIZED ENTRY (19 mm) WEAR ASSIGNED PROTECTIVE EQUIPMENT (19 mm) BREATHING ASBESTOS DUST MAY CAUSE SERIOUS BODILY HARM (7 mm)".
- .12 After work area isolation, remove heating, ventilating, and air conditioning filters, pack in sealed plastic bags 0.15 mm minimum thick and treat as contaminated asbestos waste. Remove ceiling - mounted objects such as lights, partitions, other fixtures not previously sealed off, and other objects that interfere with asbestos removal, as directed by Departmental Representative spraying during fixture removal to reduce fibre dispersal.
- .13 Maintain emergency and fire exits from work areas, or establish alternative exits satisfactory to Fire Commissioner of Canada and Provincial Fire Marshall Authority having jurisdiction.
- .14 Where application of water is required for wetting asbestos containing materials, shut off electrical power, provide 24 volt safety lighting and ground fault interrupter circuits on power source for electrical tools, in accordance with applicable CSA Standard. Ensure safe installation of electrical lines and equipment.
- .15 After preparation of work areas and Decontamination Enclosure Systems, remove designated asbestos containing ceiling tiles within work areas progressively and carefully, clean using HEPA vacuum and damp sponge, wrap clean panels in 0.10 mm minimum thick polyethylene, and store in building as directed by Departmental Representative and dispose of as contaminated waste. Clean "T" grid suspension system within work areas using wet sponge, disconnect grid from hangers, wrap grid members in 0.10 mm minimum thick polyethylene and store in building as directed by Departmental Representative.
- .16 After preparation of work area and Decontamination Enclosure Systems, remove plaster ceilings, including lath, furring, channels, hangers, wires, clips, and dispose of as contaminated waste in specified containers. Spray asbestos debris and immediate work area with amended water to reduce dust, as work progresses.
- .17 After preparation of work areas and Decontamination Enclosure Systems, for the removal of all other asbestos containing materials, remove within work area and dispose of as contaminated waste in specified containers. Spray asbestos debris and immediate work area with amended water to reduce dust, as work progresses.
- .3 Worker Decontamination Enclosure System:
  - .1 Worker Decontamination Enclosure System includes Equipment and Access Room, Shower Room, and Clean Room, as follows:
    - .1 Equipment and Access Room: build Equipment and Access Room between Shower Room and work areas, with two curtained doorways, one to Shower Room and one to work areas. Install portable toilet, waste receptor, and storage facilities for workers' shoes and protective clothing



to be reworn in work areas. Build Equipment and Access Room large enough to accommodate specified facilities, other equipment needed, and at least one worker allowing him /her sufficient space to undress comfortably.

- .2 Shower Room: build Shower Room between Clean Room and Equipment and Access Room, with two curtained doorways, one to Clean Room and one to Equipment and Access Room. Provide one shower for every five workers. Provide constant supply of hot and cold or warm water. Provide piping and connect to water sources and drains. Pump waste water through 5 micrometre filter system acceptable to Departmental Representative before directing into drains. Provide soap, clean towels, and appropriate containers for disposal of used respirator filters.
- .3 Clean Room: build Clean Room between Shower Room and clean areas outside of enclosures, with two curtained doorways, one to outside of enclosures and one to Shower Room. Provide lockers or hangers and hooks for workers' street clothes and personal belongings. Provide storage for clean protective clothing and respiratory equipment. Install mirror to permit workers to fit respiratory equipment properly.
- .4 Container and Equipment Decontamination Enclosure System:
  - .1 Container and Equipment Decontamination Enclosure System consists of Staging Area within work area, Washroom, Holding Room, and Unloading Room. Purpose of system is to provide means to decontaminate waste containers, scaffolding, waste and material containers, vacuum and spray equipment, and other tools and equipment for which Worker Decontamination Enclosure System is not suitable.
    - .1 Staging Area: designate Staging Area in work area for gross removal of dust and debris from waste containers and equipment, labelling and sealing of waste containers, and temporary storage pending removal to Washroom. Equip Staging Area with curtained doorway to Washroom.
    - .2 Washroom: build Washroom between Staging Area and Holding Room with two curtained doorways, one to Staging Area and one to Holding Room. Provide high - pressure low - volume sprays for washing of waste containers and equipment. Pump waste water through 5 micrometre filter system before directing into drains. Provide piping and connect to water sources and drains.
    - .3 Holding Room: build Holding Room between Washroom and Unloading Room, with two curtained doorways, one to Washroom and one to Unloading Room. Build Holding Room sized to accommodate at least two waste containers and largest item of equipment used.
    - .4 Unloading Room: build Unloading Room between Holding Room and outside, with two curtained doorways, one to Holding Room and one to outside.
- .5 Construction of Decontamination Enclosures:
  - .1 Build suitable framing for enclosures or use existing rooms where convenient, and line with polyethylene sheeting sealed with tape. Use two layers of FR polyethylene on floors.



- .2 Build curtained doorways between enclosures so that when people move through or when waste containers and equipment are moved through doorway, one of two closures comprising doorway always remains closed.
- .6 Separation of Work Areas from Occupied Areas:
  - .1 Separate parts of building required to remain in use from parts of building used for asbestos abatement by means of airtight barrier system constructed as follows:
    - .1 Build suitable floor to ceiling lumber or metal stud framing, cover with polyethylene sheeting sealed with tape, and apply 9 mm minimum thick plywood. Seal joints between plywood sheets and between plywood and adjacent materials with surface film forming type sealer, to create airtight barrier.
    - .2 Cover plywood barrier with polyethylene sealed with tape, as specified for work areas.
- .7 Maintenance of Enclosures:
  - .1 Maintain enclosures in tidy condition.
  - .2 Ensure that barriers and polyethylene linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.
  - .3 Visually inspect enclosures at beginning of each working period.
  - .4 Use smoke methods to test effectiveness of barriers when directed by Departmental Representative
- .8 Do not begin Asbestos Abatement work until:
  - .1 Arrangements have been made for disposal of waste.
  - .2 For wet stripping techniques, arrangements have been made for containing, filtering, and disposal of waste water.
  - .3 Work area and decontamination enclosures and parts of building required to remain in use are effectively segregated.
  - .4 Tools, equipment, and materials waste containers are on hand.
  - .5 Arrangements have been made for building security.
  - .6 Warning signs are displayed where access to contaminated areas is possible.
  - .7 Notifications have been completed and given to Departmental Representative.
  - .8 Proof is provided that all workers are listed on an asbestos work report and have been given training as described in Regulation respecting Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations made under the Occupational Health and Safety Act, Ontario Regulation 278/05.
  - .9 Operating fire extinguishers are present in asbestos work area
  - .10 Sufficient temporary lighting has been installed in work area and approved
  - .11 Negative pressure equipment is continuously operating and DOP tested
  - .12 A two-way radio or other communication system is operating between work area and outside
  - .13 Departmental Representative has been notified of intention to proceed and has reviewed and approved all enclosures, equipment and procedures

### 3.2 SUPERVISION

- .1 Minimum of one Supervisor for every ten workers is required.

- .2 Approved Supervisor must remain within Asbestos Work Area during disturbance, removal, or other handling of asbestos containing materials.

### 3.3 ASBESTOS REMOVAL

- .1 Before removing asbestos:
  - .1 Prepare site.
  - .2 Spray asbestos material with water containing specified wetting agent, using airless spray equipment capable of providing "mist" application to prevent release of fibres. Saturate asbestos material sufficiently to wet it to substrate without causing excess dripping. Spray asbestos material repeatedly during work process to maintain saturation and to minimize asbestos fibre dispersion.
- .2 Remove and dispose as specified of all asbestos containing spray or trowelled-on fireproofing on structural beams, oversprayed asbestos containing fireproofing on all surfaces and all loose fireproofing as indicated. Remove and dispose as specified all asbestos containing pipe insulation and insulated coverings as indicated
- .3 Remove saturated asbestos material in small sections. Do not allow saturated asbestos to dry out. As it is being removed pack material in sealable plastic bags 0.15 mm minimum thick and place in labelled containers for transport.
- .4 Seal filled containers. Clean external surfaces thoroughly by wet sponging. Remove from immediate working area to Staging Area. Clean external surfaces thoroughly again by wet sponging before moving containers to decontamination Washroom. Wash containers thoroughly in decontamination Washroom, and store in Holding Room pending removal to Unloading Room and outside. Ensure that containers are removed from Holding Room by workers who have entered from uncontaminated areas dressed in clean coveralls.
- .5 After completion of stripping work, wire brushed and wet sponged surfaces from which asbestos has been removed to remove visible material. During this work keep surfaces wet.
- .6 After wire brushing and wet sponging to remove visible asbestos, wet clean entire work area including Equipment and Access Room, and equipment used in process. After inspection by Departmental Representative apply continuous coat of slow drying sealer to surfaces of work area. Allow at least 16 hours with no entry, activity, ventilation, or disturbance other than operation of negative pressure units during this period.
- .7 Work is subject to visual inspection and air monitoring. Contamination of surrounding areas indicated by visual inspection or air monitoring will require complete enclosure and clean-up of affected areas.
- .8 Cleanup:
  - .1 Frequently during Work and immediately after completion of work, clean up dust and asbestos containing waste using HEPA vacuum or by damp mopping.
  - .2 Place dust and asbestos containing waste in sealed dust tight waste bags. Treat drop sheets and disposable protective clothing as asbestos waste and wet and fold to contain dust and then place in waste bags.

- .3 Immediately before their removal from Asbestos Work Area and disposal, clean each filled waste bag using damp cloths or HEPA vacuum and place in second clean waste bag.
- .4 Seal and remove double bagged waste from site. Dispose of in accordance with requirements of Provincial/Territorial and Federal authority having jurisdiction. Supervise dumping and ensure that dump operator is fully aware of hazardous nature of material to be dumped and that guidelines and regulations for asbestos disposal are followed.
- .5 Perform final thorough clean-up of Asbestos Work Areas and adjacent areas affected by Work using HEPA vacuum.

### **3.4 PIPE INSULATION REMOVAL USING GLOVE BAG**

- .1 Place tools necessary to remove insulation in tool pouch. Wrap bag around pipe and close zippers. Seal bag to pipe with cloth straps. Place polyethylene drop sheet under glove bag work area.
- .2 Place hands in gloves and use necessary tools to remove insulation. Arrange insulation in bag to obtain full capacity of bag.
- .3 Insert nozzle of garden reservoir type sprayer into bag through valve and wash down pipe and interior of bag thoroughly. Wet surface of insulation in lower section of bag.
- .4 When glove bags are intended for use at more than one location: after wash-down and application of sealer, seal off waste in lower section of bag using zipper at mid-section of bag. Remove air from top section of bag through elasticized valve using HEPA vacuum. Remove bag from pipe, reinstall in new location, and reseal to pipe prior to opening lower section of bag. Repeat stripping operation.
- .5 If bag is to be moved along pipe, first remove air from top section through elasticized valve using HEPA vacuum. Next loosen straps, move bag, re-seal to pipe using double-pull zipper to pass hangers. Repeat stripping operation.
- .6 To remove bag after completion of stripping, wash top section and tools thoroughly. Remove air from top section through elasticized valve using HEPA vacuum. Pull polyethylene waste container over glove bag before removing from pipe. Release one strap and remove freshly washed tools. Place tools in water. Remove second strap and zipper. Fold over into waste container and seal.
- .7 After removal of bag ensure that pipe is free of residue. Remove residue using HEPA vacuum or wet cloths. Ensure that surfaces are free of sludge which after drying could release asbestos dust into atmosphere. Seal exposed surfaces of pipe and ends of insulation with slow-drying sealer to seal in any residual fibres.
- .8 Upon completion of work shift, cover exposed ends of remaining pipe insulation with polyethylene taped in place.

### **3.5 FINAL CLEANUP**

- .1 Following cleaning specified in 3.3.7 above, and when air sampling shows that asbestos levels on both sides of seals do not exceed 0.01 fibres/cc as determined by membrane filter method at 400-500X magnification phase contrast illumination, as described in NIOSH Method 94-113 or equivalent, proceed with final cleanup.
- .2 Remove polyethylene sheet by rolling it away from walls to centre of work area. Vacuum visible asbestos containing particles observed during cleanup, immediately, using HEPA vacuum equipment.
- .3 Place polyethylene seals, tape, cleaning material, clothing, and other contaminated waste in plastic bags and sealed labelled waste containers for transport.
- .4 Include in clean-up Work areas, Equipment and Access Room, Washroom, Shower Room, and other contaminated enclosures.
- .5 Include in clean-up sealed waste containers and equipment used in Work and remove from work areas, via Container and Equipment Decontamination Enclosure System, at appropriate time in cleaning sequence.
- .6 Conduct final check to ensure that no dust or debris remains on surfaces as result of dismantling operations and carry out air monitoring again to ensure that asbestos levels in building do not exceed 0.01 fibres/cc. Repeat cleaning using HEPA vacuum equipment, or wet cleaning methods where feasible, in conjunction with sampling until levels meet this criteria.
- .7 As work progresses, and to prevent exceeding available storage capacity on site, remove sealed and labelled containers containing asbestos waste and dispose of to authorized disposal area in accordance with requirements of disposal authority. Ensure that each shipment of containers transported to dump is accompanied by Contractor's representative to ensure that dumping is done in accordance with governing regulations.

### **3.6 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS**

- .1 When cleanup is complete:
  - .1 Re-establish objects and furniture moved to temporary locations in course of Work, in their proper positions.
  - .2 Re-secure mounted objects removed in course of Work in their former positions.
  - .3 Re-establish mechanical and electrical systems in proper working order. Install new filters.
  - .4 Repair or replace objects damaged in the course of Work, as directed by Departmental Representative.

### **3.7 AIR MONITORING**

- .1 From beginning of Work until completion of cleaning operations, Departmental Representative to take air samples on daily basis outside of work area enclosure in accordance with Health Canada recommendations.
  - .1 Contractor will be responsible for monitoring inside enclosure in accordance with applicable Provincial Occupational Health and Safety Regulations.

- .2 Use results of air monitoring inside work area to establish type of respirators to be used. Workers may be required to wear sample pumps for up to full-shift periods.
  - .1 If fibre levels are above safety factor of respirators in use, stop abatement, apply means of dust suppression, and use higher safety factor in respiratory protection for persons inside enclosure.
  - .2 If air monitoring shows that areas outside work area enclosures are contaminated, enclose, maintain and clean these areas, in same manner as that applicable to work areas.
- .3 During course of Work, Departmental Representative to measure fibre content of air outside work areas by means air samples analyzed by Phase Contrast Microscopy (PCM).
  - .1 Stop Work when PCM measurements exceed 0.05 f/cc and correct procedures.
- .4 Final air monitoring to be conducted as follows: After Asbestos Work Area has passed visual inspection and acceptable coat of lock-down agent has been applied to surfaces within enclosure, and appropriate setting period has passed, Departmental Representative will perform air monitoring within Asbestos Work Area by aggressive methods.
  - .1 Final air monitoring results must show fibre levels of less than 0.01 f/cc.
  - .2 If air monitoring results show fibre levels in excess of 0.01 f/cc, re-clean work area and apply another acceptable coat of lock-down agent to surfaces.
  - .3 Repeat as necessary until fibre levels are less than 0.01 f/cc.

### 3.8

#### INSPECTION

- .1 Perform inspection of Asbestos Work Area to confirm compliance with specification and governing authority requirements. Deviations from these requirements that have not been approved in writing by Departmental Representative may result in Work stoppage, at no cost to Owner.
- .2 Departmental Representative will inspect Work for:
  - .1 Adherence to specific procedures and materials.
  - .2 Final cleanliness and completion.
  - .3 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.
- .3 When asbestos leakage from Asbestos Work Area has occurred or is likely to occur Departmental Representative may order Work shutdown.
  - .1 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

**END OF SECTION**

**Part 1 General**

**1.1 REFERENCES**

- .1 Department of Justice Canada.
  - .1 Canadian Environmental Protection Act (CEPA), 1999.
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
  - .1 Material Safety Data Sheets (MSDS).
- .3 Transport Canada (TC).
  - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .4 Ontario Ministry of Environment (MoE).
  - .1 R.R.O. 1990, Reg. 347, General – Waste Management, as amended.
- .5 Ontario Ministry of Labour (MoL).
  - .1 Occupational Health and Safety Act, R.S.O. 1990, c. O.1 (OHSa).
    - .1 O.Reg. 213/91, Construction Projects.
    - .2 R.R.O. 1990, Regulation 490/09, Designated Substances, as amended.
  - .2 Guideline: Lead on Construction Projects, September 2004 as revised.
- .6 Federal Canada Consumer Product Safety Act's Surface Coating Materials Regulations SOR/2005-109, as amended

**1.2 DEFINITIONS**

- .1 Airlock: system for permitting ingress or egress without permitting air movement between contaminated area and uncontaminated area, typically consisting of two curtained doorways at least 2 m apart unless Site Conditions dictate otherwise.
- .2 Authorized Visitors: Departmental Representatives or designated representatives, and representatives of regulatory agencies.
- .3 Curtained doorway: arrangement of closures to allow ingress and egress from one room to another while permitting minimal air movement between rooms, typically constructed by placing two overlapping sheets of polyethylene over existing or temporarily framed doorway, secure each along top of doorway, secure vertical edge of one sheet along one vertical side of doorway, and secure vertical edge of other sheet along opposite vertical side of doorway. Reinforce free edges of polyethylene with duct tape and weight bottom edge to ensure proper closing. Overlap each polyethylene sheet at openings not less than 1.5 m on each side unless Site Conditions dictate otherwise.
- .4 Lead-Containing Paint: Paint that contains lead in concentrations (typically greater than 90 parts per million (ppm)) that may result in elevated airborne lead exposure during operations that disturb the paint,
- .5 Occupied Area: any area of building or work site that is outside the Lead Work Area.
- .6 Lead-containing materials: Materials known to contain various levels of lead due to their historic composition.
- .7 Lead-containing equipment: Equipment suspected to contain lead because of historic applications or equipment identified as having a lead concentration, from tags or material safety data sheets.

- .8 Lead-containing mortar: Mortar that contains lead in concentrations that may result in elevated airborne lead exposure during operations that disturb the mortar.

### 1.3 ACTION AND INFORMATION SUBMITTALS

- .1 One (1) week prior to the start of abatement work, submit proposed methodology for abatement procedures for review by Departmental Representative. The proposed methodology shall include:
  - .1 Products to be used complete with MSDS information.
  - .2 List of protective equipment to be used by workers.
  - .3 Plan identifying area(s) of work for abatement procedures.
  - .4 Requirements for engineering controls, ventilation, etc.
  - .5 Requirements for access to and egress from the Lead Work Area.
  - .6 A written Health and Safety Plan specific to work of this Section. As a minimum this document must include:
    - .1 Classification of all lead abatement work in accordance with the criteria used in the document Guideline: Lead on Construction Projects issued by the Ontario Ministry of Labour.
    - .2 The identity of the “competent person” who will, on behalf of the Contractor, perform regular inspections of the lead abatement activities to prevent dangerous, unhealthy or unsafe conditions. The “competent person” must be on site at all times while lead abatement activities are in progress.
    - .3 A description of the equipment and materials, controls, crew size, job responsibilities, and operations and maintenance procedures for each activity involved in the work of this Section.
    - .4 A description of the specific control methods to be used in the lead-containing material abatement process.
    - .5 A strategy to ensure that personnel are not exposed to airborne lead or other contaminants in concentrations that exceed the current Time Weighted Average Exposure Value (TWAEV).
    - .6 A description of the medical surveillance program in place for lead abatement workers.
    - .7 Names of products to be used in lead abatement work.
- .2 Before beginning work:
  - .1 Obtain from appropriate agency and submit to Departmental Representative necessary permits for transportation and disposal of asbestos waste. Ensure that dump operator is fully aware of hazardous nature of material being dumped, and proper methods of disposal.
  - .2 Submit proof satisfactory to Departmental Representative that employees have had instruction on hazards of lead exposure, respirator use, dress, use of showers, entry and exit from work areas, and aspects of work procedures and protective measures.
  - .3 Submit proof in the form of a certificate that supervisory personnel have attended a lead-containing material abatement course, of not less than 1-day duration.
- .3 For each waste load removed from the work site, provide the weight balance slip for lead-containing materials, shipping documents as well as the lead-containing waste manifests, as required and as per waste characterization.



#### **1.4 QUALITY ASSURANCE**

- .1 Regulatory Requirements: comply with Federal, Provincial/Territorial and local requirements pertaining to lead, provided that in case of conflict among those requirements or with this specification, the more stringent requirements apply. Comply with regulations in effect at time work is performed.
- .2 Health and Safety:
  - .1 Safety Requirements: worker and visitor protection.
    - .1 Eating, drinking, chewing, and smoking are not permitted in the Lead Work Area.
    - .2 Washing facilities consisting of a wash basin, water, soap and towels shall be provided by the Contractor. All workers shall use these washing facilities before eating, drinking, smoking or leaving the work site. Washing facility areas are to be designated by Departmental Representative
    - .3 Protective equipment and clothing to be worn by workers while in the Lead Work Area includes:
      - .1 Disposable-type protective clothing that does not readily retain or permit penetration of lead dust, consisting of full-body covering including head covering with snug-fitting cuffs at wrists, ankles, and neck.
      - .2 Respirator, personally issued to worker and marked as to efficiency and purpose, and acceptable to Authority having jurisdiction as suitable for level of lead exposure in the Lead Work Area. If disposable type filters are used, provide sufficient filters so that workers can install new filters following disposal of used filters and before re-entering contaminated areas.
    - .4 Ensure that no person required to enter the Lead Work Area has facial hair that affects seal between respirator and face.
  - .5 Visitor Protection:
    - .1 Provide protective clothing and approved respirators to Authorized Visitors to work areas.
    - .2 Instruct Authorized Visitors in the use of protective clothing, respirators and procedures.
    - .3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from the Lead Work Area.

#### **1.5 WASTE MANAGEMENT AND DISPOSAL**

- .1 Place materials defined as hazardous or toxic in designated containers.
- .2 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.
- .3 Disposal of lead waste, including wash and rinse water, generated by removal activities must comply with Federal, Provincial, Territorial and Municipal regulations. Label containers with appropriate warning labels.
- .4 Provide manifests describing and listing waste created. Transport containers by approved means to licensed facility for disposal.

**1.6 EXISTING CONDITIONS**

- .1 Refer to section 01 14 25 or provided report for information pertaining to lead-containing materials to be handled, removed, or otherwise disturbed and disposed of during this Project.

**1.7 SCHEDULING**

- .1 Hours of Work: perform work during or outside regular working hours as instructed by project leader.

**1.8 DEPARTMENTAL REPRESENTATIVE'S INSTRUCTIONS**

- .1 Before beginning Work, provide Departmental Representative satisfactory proof that every worker has had instruction and training in hazards of lead exposure, in personal hygiene and work practices, and in use, cleaning, and disposal of respirators and protective clothing.
- .2 Instruction and training related to respirators includes, at minimum:
  - .1 Fitting of equipment.
  - .2 Inspection and maintenance of equipment.
  - .3 Disinfecting of equipment.
  - .4 Limitations of equipment.
- .3 Instruction and training must be provided by competent, qualified person as defined by O. Reg. 213/91 as amended by O. Reg. 628/05 – Construction Projects.
- .4 Supervisory personnel to complete required training.

**Part 2 Products**

**2.1 MATERIALS**

- .1 All materials brought to project site must be in good condition and free of lead dust. Disposable items must be of new materials only.
- .2 Lead Cleaning Agent: A cleaning agent suitable for lead dust. Acceptable products:
  - .1 Detergents with a high phosphate content (containing at least 5% trisodium phosphate).
  - .2 Phosphate-free lead dissolving agent.
- .3 FR polyethylene: minimum 0.15 mm thick, woven fibre reinforced fabric bonded both sides with polyethylene.
- .4 Tape: fibreglass - reinforced duct tape suitable for sealing polyethylene under both dry conditions and wet conditions.

**2.2 EQUIPMENT**

- .1 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with a filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.
- .2 Sprayer: Garden reservoir type, low velocity, capable of producing a mist or fine spray.

**Part 3 Execution**

**3.1 PREPARATION**

- .1 Implement lead precautionary measures appropriate to the work completed in accordance with MOL Guideline: Lead on Construction Projects, September 2004 as revised.
- .2 Type 1 Work Areas:
  - .1 Install polyethylene drop sheets below lead operations which produce or may produce dust, chips, or debris containing lead.
- .3 Type 2 Work Areas:
  - .1 Install polyethylene drop sheets below lead operations which produce or may produce dust, chips, or debris containing lead.
  - .2 Post signs in sufficient numbers to warn of the lead hazard. There shall be a sign, at least, at each entrance to the Lead Work Area. The signs shall display the following information in large, clearly visible letters using both official languages:
    - .1 Lead dust, fume or mist hazard.
    - .2 Access to the work area is restricted to authorized persons.
    - .3 Respirators must be worn in the work area.
- .4 Type 3 Work Areas:
  - .1 Post signs in sufficient numbers to warn of the lead hazard. There shall be a sign, at least, at each entrance to the Lead Work Area. The signs shall display the following information in large, clearly visible letters using both official languages:
    - .1 Lead dust, fume or mist hazard.
    - .2 Access to the work area is restricted to authorized persons.
    - .3 Respirators must be worn in the work area.
  - .2 Barriers, Partial Enclosures and Full Enclosures: Barriers, partial enclosures, and full enclosures shall be constructed to separate the Lead Work Area from the rest of the project. Barriers shall only be used where full and partial enclosures are not practical.
    - .1 Barriers:
      - .1 Ropes or barriers do not prevent the release of contaminated dust or other contaminants into the environment. However, they can be used to restrict access of workers who are not adequately protected with proper PPE, and also prevent the entry of workers not directly involved in the operation. Ropes or barriers shall be placed at a distance far enough from the operation that allows the lead-containing dust to settle. If this is not achievable, warning signs should be posted at the distance where the lead-containing dust settles to warn that access is restricted to persons wearing PPE.
    - .2 Partial Enclosures:
      - .1 Partial enclosures allow some emissions to the atmosphere outside of the enclosure. Partial enclosures may consist of vertical tarps and floor tarps so long as the tarps are overlapped and securely fixed together at the seams. A partial enclosure is

not a suitable containment system if significant dust is being generated.

- .3 Full Enclosures:
  - .1 Full enclosures are tight enclosures (with tarps that are generally impermeable and fully sealed joints and entryways). Full enclosures allow minimal or no fugitive emissions to reach the environment outside of the Lead Work Area. For full enclosures, the following requirements shall be met:
    - .1 The enclosure shall be constructed of windproof materials that are impermeable to dust.
    - .2 The enclosure shall be supported by a secure structure.
    - .3 All joints in the enclosure shall be fully sealed.
    - .4 Entrances to the enclosure shall be equipped with air locks.
    - .5 The escape of abrasive and debris from the enclosure shall be controlled, at air supply points, by the use of baffles, louvers, flap seals and filters.
- .3 Worker Decontamination Enclosure System: Worker Decontamination Enclosure System includes Equipment and Access Room, Shower Room, and Clean Room, as follows:
  - .1 Construct Worker Decontamination Enclosure System as close to the work area as possible in area specified by Departmental Representative. Submit layout of proposed enclosures and decontamination facilities including location to Departmental Representative for review.
  - .2 Equipment and Access Room: build an Equipment and Access Room between Shower Room and Lead Work Area, with two curtained doorways, one to Shower Room and one to Lead Work Area. Install a waste receptor and storage facilities for workers' shoes and protective clothing to be reworn in Lead Work Area. Build an Equipment and Access Room large enough to accommodate specified facilities, other equipment needed, and at least one worker allowing him /her sufficient space to undress comfortably.
  - .3 Shower Room: build a Shower Room between Clean Room and Equipment and Access Room, with two curtained doorways, one to Clean Room and one to Equipment and Access Room. Provide one shower for every five or fewer workers. Provide constant supply of hot and cold, or warm (between 40°C and 50°C) potable water. Provide piping and connect to water sources and drains. Provide soap, clean towels, and appropriate containers for disposal of used respirator filters.
  - .4 Clean Room: build a Clean Room between Shower Room and clean areas outside of enclosures, with two curtained doorways, one to outside of enclosures and one to Shower Room. Provide lockers or hangers and hooks for workers' street clothes and personal belongings. Provide storage for clean protective clothing and respiratory equipment. Install a mirror to permit workers to fit respiratory equipment properly.
- .4 Maintenance of Enclosures:
  - .1 Maintain enclosures in tidy condition.

- .2 Ensure that barriers and polyethylene linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.
- .3 Visually inspect enclosures at beginning of each working period.
- .5 Do not begin lead abatement work until:
  - .1 Arrangements have been made for disposal of hazardous waste, as applicable.
  - .2 Arrangements have been made for containing, filtering, testing and disposal of waste water.
  - .3 Work areas, decontamination enclosures and parts of project site required to remain in use are effectively segregated.
  - .4 Tools, equipment, and materials waste containers are on hand.
  - .5 Arrangements have been made for building security.
  - .6 Warning signs are displayed where access to contaminated areas is possible.
  - .7 Notifications have been completed and other preparatory steps have been taken.
  - .8 Departmental Representative has reviewed preparatory work and provided written approval for lead abatement work to proceed.

### 3.2 SUPERVISION

- .1 Minimum of one Supervisor for every ten or fewer workers is required.
- .2 Approved Supervisor must remain within Lead Work Area during disturbance, removal, or other handling of lead-containing paint and other lead contaminated materials.

### 3.3 LEAD REMOVAL

- .1 The removal or disturbance of asbestos-containing materials coated/covered with lead-containing coatings/materials must also be performed using appropriate asbestos precautions as outlined in the relevant Sections.
  - .1 Section 02 82 00.01 – Asbestos Abatement, Minimum Precautions.
  - .2 Section 02 82 00.02 – Asbestos Abatement, Intermediate Precautions.
  - .3 Section 02 82 00.03 – Asbestos Abatement, Maximum Precautions.
- .2 Where lead-paint removal is required, before removing lead-containing paint, lead-containing surface coatings, or disturbing other lead contaminated materials:
  - .1 Prepare site.
  - .2 Spray surfaces to be disturbed, unless wetting creates a hazard, that are finished with lead-containing coatings, with water using airless spray equipment capable of providing a “mist” application to prevent the release of dust.
- .3 Prohibited methods of lead-containing surface coating removal include:
  - .1 Dry scraping.
  - .2 Open flame burning, torching, fossil fuel-powered heat plates, welding, cutting torches, and heat guns operating at temperatures greater than 590°C.
  - .3 Machine grinding or sanding without a HEPA-filtered exhaust tool.
  - .4 Hydroblasting or high-pressure water wash.
  - .5 Abrasive blasting or sandblasting.
  - .6 Chemical paint removers containing methylene chloride.

- .4 Methods of lead-material removal that may be used, pending approval from the Departmental Representative, include:
  - .1 Electric-powered flameless heat guns that operate at temperatures less than 230°C followed by manual scraping with round edge scrapers.
  - .2 Mechanical removal methods such as HEPA sanding and wet scraping.
  - .3 Chemical removal methods that use non-caustic strippers.
  - .4 Other method(s) at the sole discretion of the Departmental Representative.
- .5 Test Area Mock-ups:
  - .1 Prepare a test area as directed by the Departmental Representative, not less than 0.3m<sup>2</sup> in surface area, for each type of substrate that requires lead-containing surface coating removal.
  - .2 Remove the paint from each test area using a method listed in Item 3.3.4. above to allow the Departmental Representative to evaluate the effectiveness of the method on that particular substrate.
  - .3 Once a test area mock-up has been approved by the Departmental Representative, this will represent the standard of acceptance for that type of substrate.
- .6 At completion of lead-containing surface coating removal (if required), perform the following clean-up:
  - .1 Wait at least 1-hour after active lead abatement work has ceased to allow airborne lead particles to settle.
  - .2 HEPA vacuum all surfaces within the Lead Work Area. Start vacuuming at the highest levels furthest from the Decontamination Facilities and work progressively downwards towards the Decontamination Facilities.
  - .3 Wash all surfaces with Lead Cleaning Agent and rinse with clean water. Start washing and rinsing at the highest levels furthest from the Decontamination Facilities and work progressively downwards towards the Decontamination Facilities.
  - .4 Repeat HEPA vacuuming, washing and rinsing as required to achieve clearance criteria.

### **3.4 FINAL CLEANUP**

- .1 Following cleaning specified in Item 3.3.6 above, and, if required by Departmental Representative, when the Lead Work Area has met the air monitoring and residual lead dust levels specified in Item 3.5, as well as inspection criteria specified in Item 3.6 proceed with final cleanup.
- .2 Remove polyethylene sheet by rolling it towards the centre of the Lead Work Area. Immediately vacuum any visible paint chips, particles, dust and debris observed during cleanup using HEPA vacuum equipment.
- .3 Place polyethylene seals, tape, cleaning material, clothing, and other contaminated waste in sealed labelled waste containers for transport.
- .4 Include in clean-up Work areas, Equipment and Access Room, Shower Room, and other contaminated enclosures.
- .5 Include in clean-up sealed waste containers and equipment used in Work and remove from work areas, at appropriate time in cleaning sequence.

- .6 A final check may be carried out to ensure that no lead dust or debris remains on surfaces as a result of dismantling operations.

### 3.5 AIR MONITORING AND SURFACE WIPE SAMPLING

- .1 From beginning of Work until completion of cleaning operations, the Departmental Representative may be on site to collect air samples either inside or outside of the Lead Work Area in accordance with standard methods for workplace air sampling and analysis.
  - .1 This air monitoring does not relieve the Contractor of any responsibility for air monitoring inside the Lead Work Area to verify that the respiratory protection in use provides a suitable protection factor.
- .2 Use results of air monitoring inside the Lead Work Area to establish type of respirators to be used. Workers may be required to wear sample pumps for up to full-shift periods.
  - .1 If airborne lead concentrations are above the protection factor of respirators in use, the Contractor shall:
    - .1 Stop abatement.
    - .2 Introduce more stringent engineering controls.
    - .3 Use a higher protection factor in respiratory protection for persons inside the Lead Work Area.
  - .2 If air monitoring shows that airborne lead concentrations outside the Lead Work Area exceed 0.025 mg/m<sup>3</sup>, the Contractor shall maintain and clean these areas, in same manner as applicable to the Lead Work Area, at no additional cost to the Client.
- .3 Final clearance air monitoring will be performed at the sole discretion of the Departmental Representative.
  - .1 Final air monitoring results must show airborne lead levels less than 0.005 mg/m<sup>3</sup>.
  - .2 If air monitoring results show airborne lead levels in excess of 0.005 mg/m<sup>3</sup>, the Contractor shall re-clean the Lead Work Area.
  - .3 Repeat as necessary until airborne lead levels are less than 0.005 mg/m<sup>3</sup>.
- .4 The following criteria shall be used to define an acceptable level of cleanliness after lead abatement activities:
  - .1 Where removal of paint coatings has been performed to accommodate the project scope of work:
    - .1 Visibly free of paint(s) and primers(s).
    - .2 Residual lead dust concentration less than:
      - .1 430 micrograms/square metre for interior floor surfaces
      - .2 2,691 micrograms/square metre for interior windowsills
      - .3 8,611 micrograms/square metre for exterior surfaces

### 3.6 INSPECTION

- .1 Perform inspections of Lead Work Area to confirm compliance with specification and requirements of authorities having jurisdiction. Deviation from these requirements that have not been approved in writing by the Departmental Representative may result in Work stoppage, at no cost to Owner.



- .2 Departmental Representative will inspect Work for:
  - .1 Adherence to specific procedures and materials.
  - .2 Final cleanliness and completion.
  - .3 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.
- .3 When a leakage of liquid, dust or fume from the Lead Work Area has occurred or is likely to occur the Departmental Representative may order Work shutdown.
  - .1 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

**END OF SECTION**

**Part 1            General**

**1.1                REFERENCES**

- .1       Canadian Construction Association (CCA), *Mould Guidelines for the Canadian Construction Industry, CCA 82-2004*
- .2       Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1       Material Safety Data Sheets (MSDS).
- .3       Environmental Abatement Council of Ontario
  - .1       Mould Guidelines 2010
- .4       CSA Z94.4-02 Selection, Use and Care of Respirators

**1.2                DEFINITIONS**

- .1       Authorized Visitors: Departmental Representative or Delegate, and representatives of regulatory agencies.
- .2       Cleaning solution: detergent solution.
- .3       Competent person: individuals who can demonstrate that mould remediation training has been obtained, is capable of identifying existing microbial hazards in workplace and selecting appropriate control strategy for microbial exposure.
- .4       Contractor: remediation contractor providing demolition and removal services as defined in specification.
- .5       Fibre reinforced polyethylene sheet (FRPS): rip-proof fibre reinforced polyethylene sheeting with added fibre reinforced adhesive tape along edges.
- .6       HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining particles greater than 0.3 microns in any direction at 99.97% efficiency.
- .7       HVAC: heating ventilating and air-conditioning systems which serve occupied areas. Includes but is not limited to air handling units, duct work, terminal boxes and vents.
- .8       Mould Contaminated Work Area: specific area or location where actual work is being performed or such other areas of a facility where it has been determined that it may be hazardous to public health as result of mould remediation.
- .9       Occupied Area: areas of building or work site that is outside of Mould Contaminated Work Area.
- .10      PPE: Personnel Protection Equipment.
- .11      Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must have a minimum of six litres capacity for work.

### **1.3 REGULATORY REQUIREMENTS**

- .1 Comply with regulations in effect at time work is performed. In case of conflict among these requirements or with these specifications the more stringent requirement applies. If no regulations exist, follow guidelines most widely accepted by recognized professional organizations such as occupational hygienists, health professionals or environmental engineers as listed in paragraph 1.1 References.

### **1.4 CLOSEOUT SUBMITTALS**

- .1 Maintain general log to provide permanent record of project. Maintain logs and other required documentation as part of permanent project file.

### **1.5 INSTRUCTION AND TRAINING**

- .1 Before commencing work, provide to Departmental Representative satisfactory proof that every worker has had instruction and training in potential health hazards of mould exposure, handling of hazardous materials, and in use of disposable respirators and protective clothing. This training can be performed as part of program to comply with requirements of OSHA Hazard Communication Standard 29 CFR 1910.1200 or equivalent standard.
- .2 Instruction and training must be provided by designated construction safety advisor.

### **1.6 WORKER PROTECTION**

- .1 Non-powered disposable filter-type respirator of type N95 following CSA standard Z94.4-02, suitable for protection against mould and acceptable to Provincial Authority having jurisdiction.
- .2 Gloves and eye protection.
- .3 Disposable paper coveralls are recommended.
- .4 No person required to enter Mould Contaminated Work Area to have facial hair that affects seal between respirator and face.
- .5 Eating, drinking and chewing are not permitted in Mould Contaminated Work Area.
- .6 Before leaving Mould Contaminated Work Area, dispose of protective clothing as waste as specified.
- .7 Ensure workers wash hands and face after leaving Mould Contaminated Work Area. Facilities for washing are located near work areas.

### **1.7 SCHEDULING**

- .1 Hours of Work: perform work during or outside regular working hours as instructed by project leader.

**Part 2 Products**

**2.1 MATERIALS**

- .1 Drop Sheets: 0.15 mm thick woven fibre reinforced fabric bonded both sides with fibre reinforced polyethylene sheet.
- .2 Disposal bags: dust-tight 0.15 mm clear polyethylene waste bags.
- .3 Wetting Agent: water to mist mould-containing material.
- .4 Cleaning solution: detergent solution for damp wipe and/or mop.
- .5 Fibre reinforced adhesive tape: used in sealing joints of fibre reinforced polyethylene sheets and for attachment of fibre reinforced polyethylene sheet to finished and unfinished surfaces. Fibre reinforced adhesive tape must be capable of adhering under both dry and wet conditions.
- .6 Materials: provide materials such as fibre reinforced polyethylene sheeting, lumber, nails, and hardware necessary to construct and dismantle barriers that isolate Mould Contaminated Work Area.

**2.2 TOOLS AND EQUIPMENT**

- .1 Tools and equipment: suitable for use with microbial contamination and must be able to withstand de-contamination.
- .2 Personnel protective equipment (protective clothing, disposable respirators): provided in sufficient quantities for duration of project.
- .3 Vacuum cleaners: equipped with HEPA filters.
- .4 Ladders and/or scaffolds: adequate length, strength and sufficient quantity to support work schedule.

**Part 3 Execution**

**3.1 PREPARATION OF MOULD WORK AREA (SMALL ISOLATED AREAS <1 SQUARE METRES OF BUILDING MATERIALS)**

- .1 Mould Contaminated Work Area and areas adjacent and around area: to be unoccupied. Vacating people from spaces adjacent to Mould Work Area is not necessary but is recommended in case of infants (less than 12 months old), elderly people, persons having undergone recent surgery, immune suppressed people or people with chronic inflammatory lung diseases.
- .2 Clean movable objects within proposed Mould Contaminated Work Area using HEPA filtered vacuum equipment, damp wipe surfaces and remove such objects from Mould Contaminated Work Area to secure and clean area.
- .3 Remove visible dust from surfaces in Mould Contaminated Work Area where dust is likely to be disturbed during course of work. Use HEPA vacuum and damp wipe area.

- .4 Do not use compressed air to clean up or remove dust from surfaces.
- .5 Seal off return air grills in Mould Contaminated Work Area with fibre reinforced polyethylene sheeting and fibre reinforced adhesive tape to minimize migration of contaminants to other parts of building.
- .6 Use 0.15 mm fibre reinforced polyethylene drop sheets tightly sealed with fibre reinforced adhesive tape over flooring in Mould Contaminated Work Areas.

**3.2 PREPARATION OF MOULD WORK AREA (< 1 SQUARE METRE IN HVAC SYSTEM IN NON-OCCUPIED AREAS)**

- .1 HVAC systems: to be shut down prior to remedial activities.
- .2 Take necessary precautions to ensure that components of HVAC systems are not contaminated during remediation. Remove and bag filters.
- .3 Barriers: to be erected around Mould Contaminated Work Area before remediation using a single layer of 0.15 mm fibre reinforced polyethylene sheeting affixed to floor and ceiling with fibre reinforced adhesive tape, with slit entry and covering flap, to contain dust and debris.
- .4 Use 0.15 mm fibre reinforced polyethylene drop sheets tightly sealed to floor with fibre reinforced adhesive tape to minimize dust and contamination.

**3.3 MICROBIAL REMEDIATION MOULD WORK AREA (<1 SQUARE METRES IN OCCUPIED SPACE)**

- .1 Use sprayer (low-velocity, fine-mist) to mist (not wet) materials containing mould to be cut or scraped. Perform work in a manner to reduce dust creation to lowest levels practicable.
- .2 Non-porous and semi-porous materials can be cleaned using detergent solution and reused depending on depth to which microbial growth has penetrated substrate. Wood to be discarded if fungal growth has affected its soundness.
- .3 Porous materials with more than small area of mould contamination and/or dampness to be removed, discarded and replaced.
- .4 Porous materials identified as lightly contaminated that can be cleaned by HEPA vacuuming, washing and/or damp wiping can be reused, but to be discarded and replaced if possible.
- .5 Dispose of contaminated building materials as specified.
- .6 During remediation, should Departmental Representative suspect contamination of areas outside Mould Contaminated Work Area, contractor to stop remediation work and immediately decontaminate these affected areas. Eliminate causes of such contamination. Unprotected individuals are prohibited from entering contaminated areas until a visual inspection determines areas are free from contamination.

- .7 Notify Departmental Representative of mould contaminated material discovered during work and not apparent from drawings, specifications or report pertaining to work. Do not disturb such material pending instructions from Departmental Representative.

### **3.4 MICROBIAL REMEDIATION MOULD WORK AREA (< 1 SQUARE METRE IN HVAC SYSTEM IN NON-OCCUPIED AREAS)**

- .1 Use sprayer (low-velocity, fine-mist) to mist (not wet) materials containing mould to be cut or scraped. Perform work in a manner to reduce dust creation to lowest levels practicable.
- .2 Porous materials in HVAC systems such as insulation of interior lined ducts and filters must be removed to bare (underlying) metal and materials properly discarded.
- .3 Dispose of contaminated building materials as specified.
- .4 During remediation, should Departmental Representative suspect contamination of areas outside Mould Work Area, contractor to stop remediation work and immediately decontaminate these affected areas. Eliminate causes of such contamination. Unprotected individuals shall be prohibited from entering contaminated areas until visual inspection determines the areas are free from contamination.
- .5 Notify Departmental Representative of mould contaminated material discovered during work and not apparent from drawings, specifications, or report pertaining to work. Do not disturb such material pending instructions from Departmental Representative.
- .6 Submit Material Safety Data Sheet for biocides and use as recommended by HVAC manufacturer with HVAC components.

### **3.5 REPAIR AND CLEAN-UP**

- .1 Clean, frequently during work and immediately after completion of work, Mould Contaminated Work Area using a HEPA vacuum and/or by damp mopping with cleaning solution.
- .2 Perform restoration of designated Mould Contaminated Work Area as specified.
- .3 Leave areas dry and visibly free from contamination, debris and dust.
- .4 Perform final thorough clean-up of work areas and adjacent areas affected by work using HEPA vacuum and/or damp mopping with detergent solution.

### **3.6 WASTE DISPOSAL**

- .1 Place dust and mould-containing waste in doubled-bagged dust-tight 0.15 mm clear polyethylene waste bags. Treat drop sheets and disposable protective clothing as waste; fold these items to contain dust, and place in plastic bags. Securely seal bags.
- .2 Clean exterior of each waste-filled bag using damp cloths and cleaning solution or HEPA vacuum prior to removal from Mould Contaminated Work Area.
- .3 Remove waste bags from site and dispose. There is no special requirements for disposal of mouldy materials, as such they can be disposed of in landfill.

**3.7 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS**

- .1 Relocate objects moved to temporary locations to their proper positions. Ensure objects are cleaned before been moved into cleaned areas.
- .2 Remount objects removed to former positions.
- .3 Reinstall filters in HVAC systems.
- .4 Re-establish mechanical and electrical systems to proper working order.

**3.8 FINAL CLEARANCE**

- .1 Departmental Representative to conduct thorough visual inspection to detect visible accumulations of dust or bulk materials remaining in work area. Should dust, debris, microbial contamination, or residue be detected repeat cleaning until area meets approval.

**END OF SECTION**



**Part 1            General**

**1.1                REFERENCES**

- .1       Canadian Construction Association (CCA), *Mould Guidelines for the Canadian Construction Industry, CCA 82-2004*
- .2       Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1       Material Safety Data Sheets (MSDS).
- .3       Environmental Abatement Council of Ontario
  - .1       Mould Guidelines 2010
- .4       CSA Z94.4-02 Selection, Use and Care of Respirators

**1.2                DEFINITIONS**

- .1       Authorized Visitors: Departmental Representative, Engineers, Consultants or designated representatives, and representatives of regulatory agencies.
- .2       Cleaning solution: detergent solution.
- .3       Competent person: individuals who can demonstrate that mould remediation training has been obtained, is capable of identifying existing microbial hazards in workplace and selecting appropriate control strategy for microbial exposure.
- .4       Contractor: remediation contractor providing demolition and removal services as defined in specification.
- .5       Fibre Reinforced Polyethylene Sheet: rip-proof fibre reinforced polyethylene sheeting with added fibre reinforced adhesive tape along edges.
- .6       HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.
- .7       HVAC: heating ventilating and air-conditioning systems which serve occupied areas. Includes but is not limited to air handling units, duct work, terminal boxes and vents.
- .8       Mould contaminated work area: specific area or location where actual work is being performed or other areas of facility where it has been determined that it may be hazardous to public health as result of mould remediation.
- .9       Occupied Area: areas of building or work site that is outside mould contaminated work area.
- .10      PPE: Personnel Protection Equipment.
- .11      Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must have a minimum of six litres capacity for work.

**1.3 REGULATORY REQUIREMENTS**

- .1 Comply with regulations in effect at time work is performed. In case of conflict among these requirements or with these specifications the more stringent requirement applies. If no regulations exist, follow guidelines most widely accepted by recognized professional organizations such as occupational hygienists, health professionals or environmental engineers as listed in paragraph 1.1 References.

**1.4 SUBMITTALS**

- .1 Submit Provincial and/or local requirements for Notice of Project form.
- .2 Submit proof of Contractors Liability Insurance for dealing with hazardous materials.
- .3 Submit Workers Compensation Board status and transcription of insurance.
- .4 Submit proof of attendance in form of certificate that supervisory personnel have trained in asbestos and/or mould remediation course, approved by Departmental Representative. Minimum of one supervisor for every ten trained workers.

**1.5 CLOSEOUT SUBMITTALS**

- .1 Maintain general log to provide permanent record of project. Maintain logs and other required documentation as part of permanent project file.
- .2 Daily log must be available for inspection upon request by Departmental Representative.
- .3 Visitor log must be available for inspection upon request by Departmental Representative.

**1.6 INSTRUCTION AND TRAINING**

- .1 Before commencing work, provide Departmental Representative or Delegate proof that workers have had instruction and training in potential health hazards of mould exposure, handling of hazardous materials, in personal hygiene including protective clothing, entry and exit from Work Area, use of disposal procedures including building materials, respirators and protective clothing.
- .2 Instruction and training related to use of personal respirators:
  - .1 Fitting of equipment.
  - .2 Inspection and maintenance of equipment.
  - .3 Disinfecting of equipment.
  - .4 Limitations of equipment.
- .3 Instruction and training must be provided by designated construction safety advisor.

**1.7 WORKER PROTECTION**

- .1 Respirators suitable for protection against mould and acceptable to Provincial Authority having jurisdiction Non-powered disposable filter-type respirator of type N95 following CSA standard Z94.4-02, half-face equipped with replaceable HEPA filter cartridges, or full-face air purifying respirators (APR) equipped with replaceable HEPA filter cartridges, personally issued to work and marked as to efficiency and purpose.

- .2 Gloves and eye protection.
- .3 Disposable paper coveralls including head covering.
- .4 Ensure that no person required to enter Mould Contaminated Work Area has facial hair that affects seal between respirator and face.
- .5 Eating, drinking and chewing are not permitted in Mould Contaminated Work Area.
- .6 Before leaving Mould Contaminated Work Area, dispose of protective clothing as waste as specified.
- .7 Ensure workers wash hands and face after leaving Mould Contaminated Work Area. Facilities for washing are located near work areas.

## **1.8 VISITOR PROTECTION**

- .1 Protective clothing and approved respirators Non-powered disposable filter-type respirator of type N95 following CSA standard Z94.4-02 full face or 1/2 face with eye protection to be worn by Authorized Visitors to Mould Contaminated Work Area.
- .2 Instruct Authorized Visitors in use of protective clothing, respirators, and procedures.
- .3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from Mould contaminated work area.

## **1.9 SCHEDULING**

- .1 Hours of Work: perform work during or outside regular working hours as instructed by project leader.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Drop Sheets: fibre reinforced polyethylene 0.15 mm thick woven fibre reinforced fabric bonded both sides with polyethylene.
- .2 Disposal bags: dust-tight 0.15 mm clear polyethylene waste bags.
- .3 Wetting Agent: water to mist mould-containing material.
- .4 Cleaning solution: detergent solution for damp wipe and/or mop.
- .5 Fibre reinforced adhesive tape: used in sealing joints of fibre reinforced polyethylene sheets and for attachment of fibre reinforced polyethylene sheet to finished and unfinished surfaces. Fibre reinforced adhesive tape must be capable of adhering under both dry and wet conditions.
- .6 Materials: provide materials such as fibre reinforced polyethylene sheeting, lumber, nails and hardware necessary to construct and dismantle barriers that isolate Mould Contaminated Work Area.

## **2.2 TOOLS AND EQUIPMENT**

- .1 Tools and equipment: suitable for use with microbial contamination and must be able to withstand de-contamination.
- .2 Personnel protective equipment (protective clothing, personal respiratory filter cartridges, HEPA air filters, etc.): to be provided in sufficient quantities for duration of project.
- .3 Vacuum cleaners: equipped with HEPA filters.
- .4 Ladders and/or scaffolds: adequate length, strength and sufficient quantity to support work schedule.
- .5 Exhaust air fan systems: equipped with HEPA filters and be capable of providing sufficient exhaust air to create a minimum pressure differential of 5 to 7 Pa and to allow sufficient flow of air through area.

## **Part 3 Execution**

### **3.1 PREPARATION OF MOULD CONTAMINATED WORK AREA**

- .1 Mould Contaminated Work Area and areas adjacent and around area to be unoccupied. Vacating is recommended in case of infants (less than 12 months old), elderly people, persons having undergone recent surgery, immune suppressed people or people with chronic inflammatory lung diseases.
- .2 One supervisor for every ten trained workers is required.
- .3 Approved supervisor must remain within Mould Contaminated Work Area at all times during disturbance, removal or other handling of mould-contaminated materials.
- .4 Turn off HVAC systems prior to starting remediation work to prevent contamination and dust dispersal to other areas of building.
- .5 Seal off windows, doorways, skylights, ducts, grilles, diffusers and other openings between Mould Contaminated Work Area and uncontaminated areas outside Mould Contaminated Work Area with fibre reinforced polyethylene sheeting and fibre reinforced adhesive tape to minimize migration of contaminants to other parts of building.
- .6 Clean movable objects within proposed Mould Contaminated Work Area using HEPA filtered vacuum equipment, damp wipe surfaces and remove such objects from Mould Contaminated Work Area to a secure and clean area.
- .7 Clean fixed objects within proposed Mould Contaminated Work Area using HEPA filtered vacuum, damp wipe surfaces and cover with one layer of fibre reinforced polyethylene sheeting securely fastened with fibre reinforced adhesive tape.
- .8 Remove visible dust from surfaces in Mould Contaminated Work Area where dust is likely to be disturbed during course of mould remediation work. Use HEPA vacuum and damp wipe the area.
- .9 Do not use compressed air to clean up or remove dust from any surface.

- .10 Erect critical barriers around perimeter of Mould Contaminated Work Area before remediation using single layer of 0.15 mm fibre reinforced polyethylene sheeting extending from floor slab to as close as possible to underside of above floor slab. Seal gaps due to ductwork, piping conduits with layer of 0.15 mm fibre reinforced polyethylene sheeting. For larger areas, a steel or wooden stud frame can be erected and fibre reinforced polyethylene sheeting attached to it.
- .11 Use 0.15 mm fibre reinforced drop sheets tightly sealed with fibre reinforced adhesive tape over flooring in work areas.
- .12 Ensure that the containment area is under negative pressure. Use HEPA filtered fan exhausted outside of Mould Contaminated Work Area to create negative pressure.
- .13 In smaller easily contained areas, use HEPA vacuum cleaner nozzle within enclosure. Locate vacuum canister outside enclosure.
- .14 Before beginning work, at each access to contaminated work area, install warning signs in both official languages in upper case 'Helvetica Medium' letters reading as follows, where number in parentheses indicates font size to be used: 'CAUTION MOULD HAZARD AREA (25 mm) / NO UNAUTHORIZED ENTRY (19 mm) / WEAR ASSIGNED PROTECTIVE EQUIPMENT (19 mm) / BREATHING MOULD DUST MAY CAUSE SERIOUS BODILY HARM (7 mm)'.  
'
- .15 Do not begin remediation work until barriers are inspected and authorization is given by Departmental Representative.

### 3.2 MICROBIAL REMEDIATION

- .1 If remediation procedures are expected to generate dust or visible concentration of fungi is heavy (blanket as opposed to patchy coverage), then it is recommended that Maximum Precautions Section 02 85 00.03 for Mould Remediation be followed using full containment.
- .2 Use sprayer (low-velocity, fine-mist) to mist (not wet) materials containing mould to be cut or scraped. Perform work to reduce dust creation to lowest levels practicable.
- .3 Non-porous and semi-porous materials can be cleaned using the cleaning solution and reused depending on depth to which microbial growth has penetrated substrate. Wood to be discarded if fungal growth has affected its soundness.
- .4 Porous materials such as ceiling tiles, insulation or wallboards with more than 1 square metre of mould contamination and/or dampness to be removed and discarded.
- .5 Porous materials identified as lightly contaminated that can be cleaned by HEPA vacuuming, washing or damp wiping can be reused, but to be discarded and replaced if possible.
- .6 Dispose of contaminated building materials as specified.
- .7 During mould remediation, should Departmental Representative suspect contamination of areas outside enclosed Mould Contaminated Work Area, contractor to stop remediation work and immediately decontaminate affected areas. Eliminate causes of such

contamination. Prohibit unprotected individuals from entering these contaminated areas until air and swab sampling and a visual inspection determines areas are free from contamination.

- .8 Notify Departmental Representative of mould contaminated material discovered during work and not apparent from drawings, specifications or report pertaining to work. Do not disturb such material pending instructions from Departmental Representative.

### **3.3 REPAIR AND CLEAN-UP**

- .1 During Mould Remediation and immediately after completion of mould remediation, clean enclosure starting within top of enclosure and working down to floor. Clean areas using HEPA vacuum and/or by damp mopping with cleaning solution.
- .2 Perform restoration of designated Mould Contaminated Work Area as specified.
- .3 Leave areas dry and visibly free from contamination, debris and dust.
- .4 After clean-up within barrier dismantle, barrier and dispose of as specified.
- .5 Perform final thorough clean-up of work areas and adjacent areas affected by work using HEPA vacuum and/or damp mopping with cleaning solution.

### **3.4 WASTE DISPOSAL**

- .1 Place debris and mould-containing waste in doubled-bagged dust-tight 0.15 mm fibre reinforced clear polyethylene waste bags. Treat drop sheets and disposable protective clothing as waste; fold these items to contain dust, and place in plastic bags. Securely seal bags.
- .2 Cover large items that have heavy mould growth with fibre reinforced polyethylene sheeting and sealed with fibre reinforced adhesive tape before they are removed from enclosure.
- .3 Clean exterior of each waste-filled bag using damp cloths or HEPA vacuum prior to removal from Mould Contaminated Work Area.
- .4 Remove waste bags from site and dispose. There is no special requirements for disposal of mouldy materials, as such they can be disposed of in landfill.

### **3.5 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS**

- .1 Return objects moved to temporary locations to their location. Ensure objects are cleaned before being moved into cleaned areas.
- .2 Remount objects removed to former positions.
- .3 Re-establish mechanical and electrical systems to proper working order. Install new filters into HVAC systems serving the affected area as part of remediation.

**3.6 FINAL CLEARANCE**

- .1 Departmental Representative to conduct thorough visual inspection to detect visible accumulations of dust or bulk materials remaining in work area. Should dust, debris, microbial contamination, or residue be detected repeat cleaning, until area meets approval.
- .2 Before and after work, take air samples inside of Mould Contaminated Work Area enclosures in accordance with recommended guidelines.
- .3 Perform final air monitoring of Mould Contaminated Work Area provided area has passed visual inspection and an appropriate settling period of 12 hours has passed. If air monitoring results are deemed unacceptable by Departmental Representative, areas are to be re-cleaned with HEPA vacuum and damp wiped until levels are found to be acceptable by Departmental Representative.

**END OF SECTION**



**Part 1 General**

**1.1 REFERENCES**

- .1 Canadian Construction Association (CCA), *Mould Guidelines for the Canadian Construction Industry, CCA 82-2004*
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS)
- .3 Environmental Abatement Council of Ontario
  - .1 Mould Guidelines 2010
- .4 CSA Z94.4-02 Selection, Use and Care of Respirators

**1.2 DEFINITIONS**

- .1 Authorized Visitors: Departmental Representatives, Engineers, Consultants or designated representatives, and representatives of regulatory agencies.
- .2 Cleaning solution: detergent solution
- .3 Competent person: individuals who can demonstrate that mould remediation training has been obtained, is capable of identifying existing microbial hazards in workplace and selecting appropriate control strategy for microbial exposure.
- .4 Contractor: remediation contractor providing demolition and removal services as defined in specifications.
- .5 Critical barrier or enclosure: minimum of two separate layers of 0.15 mm fibre reinforced polyethylene sheeting (FRPS) taped securely and separately over windows, doorways, diffusers, grilles and any other openings between work area and uncontaminated areas outside of work area including outside of building.
- .6 Curtained doorway: arrangement of closures to allow ingress and egress from one room to another. Typically constructed as follows: Place two overlapping sheets (minimum overlap of 1 metre or width of doorway) of FRPS over existing or temporarily framed doorway, securing each along top of doorway, securing vertical edge of one sheet along one vertical side of doorway and securing vertical edge of other sheet along opposite vertical side of doorway. Reinforce free edges of FRPS with fibre reinforced adhesive tape and weight bottom edge to ensure proper closing. Space curtained doorways minimum of 2 metres apart.
- .7 Decontamination Room: enclosure located between Mould Contaminated Work Area and uncontaminated area for decontamination of equipment and workers, typically consisting of two curtained doorways at least 2 metres apart.
- .8 Fibre Reinforced Polyethylene Sheet (FRPS): rip-proof polyethylene sheeting with fibre reinforced adhesive tape added along edges.

- .9 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining particles greater than 0.3 microns at 99.97% efficiency.
- .10 HVAC: heating ventilating and air-conditioning systems which serve occupied areas. Includes but is not limited to air handling units, duct work, terminal boxes and grills.
- .11 Mould Contaminated Work Area (MCWA): specific area or location where actual work is being performed or such other area of facility which it has been determined may be hazardous to public health as result of mould remediation.
- .12 Negative pressure: maintain Mould Contaminated Work Area at negative pressure relative to surrounding space to prevent contaminants from leaving contaminated area. Use exhaust fan with HEPA filter to maintain Mould Contaminated Work Area at lower pressure than surrounding areas. Maintain pressure differential of 5 to 7 Pa . Air flow movement can be verified with smoke pencil.
- .13 Occupied Area: areas of building or work site that are outside Mould Contaminated Work Area.
- .14 PPE: Personnel Protective Equipment.
- .15 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray; with minimum of six litres capacity for work.

### **1.3 REGULATORY REQUIREMENTS**

- .1 Comply with regulations in effect at time work is performed. In case of conflict among these requirements or with these specifications more stringent requirement applies. If no regulations exist, follow guidelines most widely accepted by recognized professional organizations such as occupational hygienists, health professionals or environmental engineers as listed in paragraph 1.1 References.

### **1.4 SUBMITTALS**

- .1 Submit proof satisfactory to Departmental Representative that employees have had instruction on potential hazards of mould exposure, use of personal respirator and protective clothing, entry and exit from work areas and aspects of work procedures and protective measures.
- .2 Submit Provincial and/or local requirements for Notice of Project form.
- .3 Submit proof of Contractors Liability Insurance for dealing with hazardous materials.
- .4 Submit Workers Compensation Board status and transcription of insurance.
- .5 Submit proof of attendance in form of certificate that supervisory personnel have been trained in asbestos and/or mould remediation course, approved by Departmental Representative. Minimum of one supervisor for every ten trained workers.
- .6 Submit proof of qualifications of both remediation supervisor and subcontractors including relevant job experience to project.

- .7 Submit layout of proposed enclosures and decontamination facilities to Departmental Representative for review.
- .8 Submit fitting record by construction safety advisor to Departmental Representative that employees have prior respirator fitting and testing. Workers must be fit tested with respirator that is personally issued.

#### **1.5 CLOSEOUT SUBMITTALS**

- .1 Maintain general log provide to permanent record of project. Maintain logs, including negative pressure records and other required documentation as part of permanent project file.
- .2 Daily log must be available for inspection upon request by Departmental Representative.
- .3 Visitor log must be available for inspection upon request by Departmental Representative.

#### **1.6 INSTRUCTION AND TRAINING**

- .1 Before commencing work, provide Departmental Representative proof that workers have had instruction and training in potential health hazards of mould exposure, handling of hazardous materials, in personal hygiene including protective clothing, entry and exit from Mould Contaminated Work Area, use of disposal procedures including building materials, respirators and protective clothing.
- .2 Instruction and training related to use of personal respirators:
  - .1 Fitting of equipment.
  - .2 Inspection and maintenance of equipment.
  - .3 Disinfecting of equipment.
  - .4 Limitations of equipment.
- .3 Instruction and training must be provided by designated construction safety advisor.
- .4 Supervisory personnel to complete required training in asbestos abatement and/or mould remediation.

#### **1.7 WORKER PROTECTION**

- .1 Provide tight-fitting full-face dual cartridge negative air purifying respirator equipped with HEPA filter cartridges to be worn. Disposable respirators not allowed.
- .2 Gloves that extend to middle of forearm.
- .3 Use mould-impervious polyethylene coated disposable head and foot coverings, and body suit made of breathable material. Seal gaps, such as those around ankles and wrists, with fibre reinforced adhesive tape.
- .4 Procedures for entering Mould Contaminated Work Area. Each worker to:
  - .1 Remove street clothes in Decontamination Room and put on respirator with new filters or reusable filters, clean disposable protective clothing and head covers

- before entering Mould Contaminated Work Area. Store street clothes, uncontaminated footwear and towels in Decontamination Room.
- .2 Ensure that no person required to enter Mould Contaminated Work Area has facial hair that affects seal between respirator and face.
  - .3 Eating, drinking and chewing are not permitted in Mould Contaminated Work Area. Drinking is permitted in Decontamination Area.
  - .5 Procedures for exiting Mould Contaminated Work Area. Workers to:
    - .1 Remove gross contamination from clothing before leaving work area then proceed to Decontamination Room and remove disposable protective clothing except respirators. Place contaminated work suits in closed containers for disposal with mould contaminated materials.
    - .2 Clean outside of respirator with cleaning solution. Remove respirator, remove and dispose of filters in container provided for purpose. Wash and rinse inside of respirator.
    - .3 When not in use in work area, store reusable work footwear in Decontamination Room. Upon completion of mould remediation, clean footwear thoroughly inside and out using cleaning solution before removing from Mould Contaminated Work Area or from Decontamination Room.
    - .4 Proceed to decontamination room and change into street clothes at end of each day's work.
    - .5 If re-entering work area, follow entering and exiting procedures.
  - .6 Workers: to be fully protected with respirators and protective equipment clothing during preparation of erecting enclosure prior to commencing actual mould remediation.
  - .7 Post in Decontamination room procedures specified, in both official languages.

## **1.8 VISITOR PROTECTION**

- .1 Protective clothing and approved respirators, full face or 1/2 face with eye protection to be worn by Authorized Visitors to Mould Contaminated Work Area.
- .2 Instruct Authorized Visitors in proper use of protective clothing, respirators, and procedures.
- .3 Instruct Authorized Visitors proper procedures to be followed in entering into and exiting from Mould Contaminated Work Area.

## **1.9 SITE CONDITIONS**

- .1 Inform sub-trades of presence of mould-contaminated materials and potential health hazards of mould exposure.
- .2 Submit to Departmental Representative copy of notifications prior to start of work.

## **1.10 SCHEDULING**

- .1 Hours of Work: perform work during or outside regular working hours as instructed by project leader.

**Part 2 Products**

**2.1 MATERIALS**

- .1 Drop Sheets: fibre reinforced polyethylene 0.15 mm thick woven fibre reinforced fabric bonded both sides with polyethylene.
- .2 Disposal bags: dust-tight 0.15 mm clear polyethylene waste bags.
- .3 Wetting Agent: water to mist mould-containing material.
- .4 Cleaning solution: detergent solution for damp wipe and/or mop.
- .5 Fibre reinforced adhesive tape: used in sealing joints of fibre reinforced polyethylene sheets and for attachment of fibre reinforced polyethylene sheet to finished and unfinished surfaces. Fibre reinforced adhesive tape must be capable of adhering under both dry and wet conditions.
- .6 Provide materials such as polyethylene sheeting, lumber, nails and other hardware necessary to construct and dismantle decontamination enclosures and barriers that isolate Mould Work Area as appropriate for work.

**2.2 TOOLS AND EQUIPMENT**

- .1 Tools and equipment: suitable for use with microbial contamination and must be able to withstand de-contamination.
- .2 Personnel protective equipment (protective clothing, personal respiratory filter cartridges, HEPA air filters, etc.) provide in sufficient quantities for duration of project.
- .3 Exhaust air fan systems: equipped with HEPA filters and be capable of providing sufficient exhaust air to create a minimum pressure differential of 5 to 7 Pa and to allow sufficient flow of air through area.
- .4 Pressure differential automatic recording instrument provide: to ensure exhaust air devices provide minimum pressure differential required between Mould Contaminated Work Area and uncontaminated areas. Install equipment in critical barrier between Mould Contaminated Work Area and uncontaminated areas and gap seal with fibre reinforced adhesive tape.
- .5 Vacuum cleaners: HEPA filters.
- .6 Ladders and/or scaffolds: adequate length, strength and sufficient quantity to support work schedule.

**Part 3 Execution**

**3.1 PREPARATION OF MOULD CONTAMINATED WORK AREAS (GREATER THAN 10 SQUARE METRES CONTAMINATED IN AN AREA)**

- .1 Mould Contaminated Work Area and areas adjacent and around: unoccupied. Vacating is required for infants (less than 12 months old), elderly people, persons having undergone

recent surgery, immune suppressed people or people with chronic inflammatory lung diseases.

- .2 One supervisor for every ten trained mould remediation workers is required.
- .3 Approved supervisor must remain within Mould Contaminated Work Area during disturbance, removal, or other handling of mould-contaminated materials.
- .4 Turn off HVAC systems serving Mould Contaminated Work Areas prior to starting remediation work to prevent contamination and dust dispersal to other areas of building.
- .5 Clean movable objects within proposed Mould Contaminated Work Area using HEPA filtered vacuum, damp wipe surfaces and remove such objects from Mould Contaminated Work Area to a secure and clean area.
- .6 Clean fixed objects within proposed work area using HEPA filtered vacuum, damp wipe surfaces and enclose with 2 separate layers of 0.15 mm fibre reinforced polyethylene sheeting securely sealed with fibre reinforced adhesive tape.
- .7 Remove visible dust from surfaces in work area where dust is likely to be disturbed during course of mould remediation work. Use HEPA vacuum and damp wipe area.
- .8 Do not use compressed air to clean up or remove dust from surfaces.
- .9 Seal off windows, doorways, skylights, ducts, grilles, diffusers, ceiling plenums, electrical outlets and openings between work area and uncontaminated areas to prevent spread of dirt and spores with 2 separate layers of 0.15 mm (fibre reinforced polyethylene sheeting securely held in place by fibre reinforced adhesive tape. Doorways and corridors that will not be used for passage during work must be sealed with fixed critical barriers.
- .10 Erect critical barriers around perimeter of Mould Contaminated Work Area before remediation using two separate layers of 0.15 mm fibre reinforced polyethylene sheeting extending from floor slab to as close as possible to underside of above floor slab. Seal gaps due to ductwork, piping conduits with 2 separate layers of 0.15 mm fibre reinforced polyethylene sheeting. For larger areas, erect steel or wooden stud frame and fibre reinforced polyethylene sheeting attached to it. Frame openings greater than 3 square metres with 38 x 89 mm studs spaced 400 mm on center. Barriers must be constructed without disturbing contaminated materials.
- .11 Seal floor and wall surfaces within enclosure which are not to be removed as microbial waste with minimum of 2 separate layers of 0.15 mm polyethylene sheeting. Cover floors first so that fibre reinforced polyethylene extends at least 300 mm and fold up against enclosure wall, overlap vertical fibre reinforced polyethylene sheet with floor fold up.
- .12 Build worker Decontamination Room at exits from work areas.
- .13 Put negative pressure system in operation and operate continuously from time first fibre reinforced polyethylene is installed to seal openings until final completion of work including final clean-up. Provide continuous monitoring of pressure differential using automatic recording instrument.

- .14 After Mould Contaminated Work Area enclosure is completed, remove HVAC filters, pack in sealed plastic bags 0.15 mm minimum thickness and treat as contaminated waste. Remove objects that might interfere with mould removal, as directed by Departmental Representative. Use HEPA vacuum during fixture removal to reduce dust dispersal.
- .15 Before beginning mould remediation work, at each access to Mould Contaminated Work Area, install warning signs in both official languages in upper case 'Helvetica Medium' letters reading as follows, where number in parentheses indicates font size to be used : 'CAUTION MOULD HAZARD AREA (25 mm) / NO UNAUTHORIZED ENTRY (19 mm) / WEAR ASSIGNED PROTECTIVE EQUIPMENT (19 mm) / BREATHING MOULD DUST MAY CAUSE SERIOUS BODILY HARM (7 mm)'.

### **3.2 PREPARATION OF WORKER DECONTAMINATION ENCLOSURE SYSTEM**

- .1 Establish worker decontamination enclosure system between Mould Contaminated Work Area and uncontaminated area. Access to Mould Contaminated work area through this enclosure.
- .2 Access to Decontamination Room through double flap curtained openings.
- .3 Decontamination Room: build Decontamination Room between Mould Contaminated Work Areas, with two curtained doorways, one to Mould Contaminated Work Area and one to uncontaminated areas. Install waste receptor and storage facilities for workers' shoes and protective clothing to be reworn in Decontamination Room. Decontamination Room: large enough to accommodate specified facilities, equipment needed, and at least one worker allowing sufficient space to change clothes comfortably. Provide storage for clean protective clothing and respiratory equipment. Install mirror to permit workers to fit respiratory equipment properly.
- .4 No personnel permitted to leave Decontamination Room unless first decontaminated by changing, wet cleaning or HEPA vacuuming to remove dust and mould spores. No contaminated materials or persons to enter uncontaminated area.

### **3.3 MAINTENANCE OF ENCLOSURES**

- .1 Maintain enclosures in tidy condition.
- .2 Ensure that barriers and fibre reinforced polyethylene linings are effectively sealed with duct tape at beginning of each working period. Repair damaged barriers and remedy defects immediately upon discovery.
- .3 Use smoke methods to test effectiveness of barriers when directed by Departmental Representative.

### **3.4 PREPARATION OF HVAC SYSTEM ENCLOSURES (> 1 SQUARE METRE CONTAMINATION)**

- .1 Preparation of enclosures as specified can be applied to remediation of microbial growth on outside or inside surfaces of HVAC systems.
- .2 Shut down HVAC systems prior to mould remedial activities.



- .3 Take necessary precautions to ensure that components of HVAC systems are not contaminated during remediation, especially porous materials such as filters.
- .4 Decontamination rooms are required if contamination is greater than 3 square metres.

### 3.5 MICROBIAL REMEDIATION WORK AREAS

- .1 Commence mould remediation work when:
  - .1 Mould Contaminated Work Areas and decontamination enclosures are effectively segregated from parts of building required to remain in use. Enclosures are to be inspected by Departmental Representative.
  - .2 Tools, equipment and materials waste containers are on site.
  - .3 Building security has been set up.
  - .4 Warning signs as specified are displayed where access to contaminated areas is possible.
  - .5 Notifications have been completed and preparatory steps have been taken.
- .2 Authorized supervisor employed by contractor and qualified in microbial contamination remediation to be on job site to ensure establishment and maintenance of negative pressure enclosure and proper work practices throughout project.
- .3 Do not begin remediation work until authorized by Departmental Representative.
- .4 Use sprayer, low-velocity, fine mist to mist where materials containing mould are to be cut or scraped. Perform work to reduce dust creation to lowest levels practicable.
- .5 Remove microbially contaminated materials such as wallpaper, ceiling tiles, insulation from framing, carpet or wallboard in designated locations as outlined in specification. Removal to include visibly contaminated material as determined by Departmental Representative.
- .6 Remove contaminated material in small sections within enclosure. Pack material in sealable plastic bags 0.15 mm minimum thickness and place in containers for disposal.
- .7 Non-porous and semi-porous materials that are identified as contaminated can be cleaned using HEPA-filtered vacuuming and damp wiping with detergent solution and reused depending on depth to which microbial growth has penetrated substrate. Wood is to be discarded if fungal growth has affected its soundness.
- .8 Where designed waste container is not used, remove sealed containers containing mould waste and dispose following specified procedures.
- .9 During mould remediation, should the Departmental Representative suspect contamination of areas outside enclosed Mould Contaminated Work Area contractor to stop remediation work and immediately decontaminate these affected areas. Eliminate causes of such contamination. Unprotected individuals prohibited from entering these contaminated areas until air and swab sampling and visual inspections determine areas are free of contamination.

**3.6 MICROBIAL REMEDIATION HVAC WORK AREA**

- .1 Porous materials in HVAC systems such as insulation of interior lined ducts, fibrous insulation and filters must be removed to bare (underlying) metal and materials properly discarded as specified
- .2 Submit Material Safety Data Sheet for biocides to be used as recommended by HVAC manufacturer with HVAC components.
- .3 During remediation, should Departmental Representative suspect contamination of areas outside work area contractor to stop remediation work and immediately decontaminate these affected areas. Eliminate causes of such contamination. Unprotected individuals: prohibited from entering contaminated areas until air and surface sampling and visual inspections determine areas are free of contamination.

**3.7 REPAIR AND CLEAN-UP**

- .1 During mould remediation and immediately after completion of mould remediation, clean enclosure starting within top of enclosure and working down to floors. Clean both enclosed area and Decontamination Room using HEPA vacuum and/or by damp mopping with cleaning solution.
- .2 HEPA vacuum inside layer of polyethylene sheeting within work area and damp wiped prior to removal. Removal of this layer to occur after removal and decontamination activities are completed and work area inspected by Departmental Representative.
- .3 Perform restoration of designated Mould Contaminated Work as specified.
- .4 Remove inside layer of fibre reinforced polyethylene sheeting by rolling it away from walls to centre of work area. Vacuum visible debris during cleanup, immediately, using HEPA vacuum.
- .5 HEPA vacuum, minimum of twelve hours after inside layer of fibre reinforced polyethylene sheeting has been removed, second layer of polyethylene sheeting and damp wipe.
- .6 Include Decontamination Room in similar clean-up.
- .7 Remove non-essential fibre reinforced polyethylene sheeting and visible accumulations of material and debris.
- .8 Dispose of used fibre reinforced polyethylene sheets, used fibre reinforced adhesive tape, cleaning material, clothing, and contaminated waste.
- .9 Include sealed waste containers and equipment used in Mould Contaminated Work Areas in cleanup and removed from work areas, via Decontamination Room.
- .10 Carry out final visual inspection check to ensure that no dust or debris remains on surfaces as result of dismantling operations. Perform final clearance air sampling acceptable by Departmental Representative prior to re-occupancy. Repeat cleaning using HEPA vacuum equipment, or damp cleaning methods, in conjunction with sampling until levels meet these criteria.

- .11 Upon notification that final tests are acceptable remove remaining critical barriers. HEPA vacuum surfaces behind containment barriers, including walls, floors, ceiling tiles, windows, doors and other surfaces. HEPA vacuum adjacent interior spaces within 3 metres of former location of containment barriers.

### **3.8 WASTE DISPOSAL**

- .1 Place debris and microbial infected waste in doubled-bagged dust-tight 0.15 mm clear polyethylene waste bags. Treat drop sheets and disposable protective clothing as waste; fold these items to contain dust, and place in plastic bags. Securely seal bags and place in waste containers for transport.
- .2 Cover large items that have heavy mould growth with two layers of polyethylene sheeting and sealed with fibre reinforced adhesive tape before they are removed from cleaned work area.
- .3 Clean outside of bags and/or waste containers with damp cloth and cleaning solution or HEPA vacuumed prior to their transport to uncontaminated areas of building.
- .4 Remove waste bags and/or containers from site and dispose. There are no special requirement for disposal of mouldy materials, as such they can be disposed of in landfill.

### **3.9 RE-ESTABLISHMENT OF MOVABLE OBJECTS AND SYSTEMS**

- .1 Return objects moved to temporary locations to their original location. Ensure objects are cleaned before been moved into cleaned area.
- .2 Remount objects to former positions.
- .3 Advise Building Operator to re-establish HVAC and electrical systems to proper working condition. Replace filters in HVAC system serving affected areas.

### **3.10 AIR MONITORING AND FINAL CLEARANCE**

- .1 Before and after work, take air samples inside of Mould Contaminated Work Area enclosures in accordance with recommended guidelines.
- .2 Departmental Representative to conduct thorough visual inspection to detect visible accumulations of dust or bulk materials remaining in work area. If dust, debris, microbial contamination, or residue be detected repeat cleaning at until area meets approval.
- .3 Perform final air monitoring of Mould Contaminated Work Area provided area has passed visual inspection and appropriate settling period of 12 hours has passed. If air monitoring results are deemed unacceptable by Departmental Representative, re-clean areas with HEPA vacuum and damp wiped until levels are found to be acceptable by Departmental Representative.

**END OF SECTION**

**Part 1 General**

**1.1 SUMMARY**

- .1 This section specifies requirements and procedures for silica precautionary measures. This section conforms to the requirements of the Ontario Occupational Health and Safety Act, R.S.O. 1990, O. Reg. 490/09, as amended, Designated Substances.
- .2 Comply with the requirements of this Section when performing the following work:
  - .1 Work at site which may involve contact with silica dust generated through such processes as sawing, cutting, grinding, blasting and/or breaking of the silica containing material.

**1.2 REFERENCES**

- .1 Federal Legislation
  - .1 Canada Labour Code and associated regulations.
- .2 Provincial legislation
  - .1 Ontario Occupational Health and Safety Act, R.S.O. 1990, O. Reg. 490/09, as amended, Designated Substances.

**1.3 DEFINITIONS**

- .1 **Dangerous Goods:** product, substance, or organism that is specifically listed or meets hazard criteria established in Transportation of Dangerous Goods Regulations.
- .2 **Hazardous Material:** product, substance, or organism that is used for its original purpose; and that is either dangerous goods or a material that may cause adverse impact to environment or adversely affect health of persons, animals, or plant life when released into the environment.
- .3 **Hazardous Waste:** any hazardous material that is no longer used for its original purpose and that is intended for recycling, treatment or disposal.
- .4 **Hazardous Material Workplan:** A brief report identifying the location and quantities of hazardous materials and the methods that will be used to remove, store, transport and dispose of them.
- .5 **Workplace Hazardous Materials Information System (WHMIS):** Canada-wide system designed to give employers and workers information about hazardous materials used in workplace. Under WHMIS, information on hazardous materials is provided on container labels, material safety data sheets (MSDS), and worker education programs. WHMIS is put into effect by combination of federal and provincial laws.

**1.4 PRECAUTIONARY MEASURES AND PROCEDURES**

- .1 Execute work by methods to minimize raising silica dust from demolition operations. Where practical, wet methods or a dust collection system should be used to reduce dust, with consideration of heritage requirements regarding the use of water.
- .2 Adequate ventilation, including local exhaust ventilation, should be maintained to prevent the accumulation and recirculation of harmful concentrations of free crystalline silica in the work area.
- .3 As practical, processes that generate silica dust should be completed in enclosed areas wherever possible to prevent the spread of silica dust outside of the work area.

- .4 Implement and maintain silica dust control measures during work to ensure that silica levels do not exceed allowable limits.
- .5 Departmental Representative may stop work at any time when release of silica dust to adjacent area is suspected. Contractor must discuss procedures that are proposed to resolve the problem. Make all necessary changes to operations prior to resuming any demolition activities that may cause release of silica dust at no extra cost to the Departmental Representative.
- .6 Silica dust should be cleaned from machinery and work surfaces by wet sweeping, the use of sweeping compounds, or vacuum cleaners fitted with a HEPA filter to prevent the recirculation of dusty air. Cleaning methods such as blowing with compressed air or dry sweeping should be avoided. Where exposure to free crystalline silica occurs, protective work clothing should be vacuumed before removal.
- .7 Store material containing silica dust in closed containers or use other appropriate means to prevent dust from becoming airborne.

## **1.5 PERSONAL PROTECTIVE EQUIPMENT**

- .1 Anticipated levels of personal protection based on work activity involving silica dust are listed below and are in addition to the personal protective equipment required for the completion of the demolition activities.
  - .1 Air purifying half-mask respirator equipped with HEPA filter cartridges or supplied-air type, personally issued to the worker and marked as to efficiency and purpose, and acceptable to the Provincial Authority having jurisdiction as suitable for silica and the level of silica exposure in the Work Area. If disposable type filters are used, provide sufficient filters so that workers can install new filters following disposal of used filters and before re-entering contaminated areas.
    - .1 If higher levels of silica dust are suspected, generated, anticipated, etc. the use of respiratory protection appropriate for the exposure is required.
  - .2 Eye Protection: Goggles, Safety glasses with side shields, or Face shield.
  - .3 If requested by a worker,
    - .1 Hand Protection: Gloves
    - .2 Clothing: Full body protective clothing

## **1.6 AIR MONITORING**

- .1 If air monitoring shows that work areas contain crystalline silica above the specified action levels, these areas shall be cleaned by previously outlined methods at no additional cost to the Departmental Representative.

## **1.7 PERMITS**

- .1 Contractor is responsible to obtain all necessary permits, licenses and approvals to conduct the abatement (e.g. Ontario Ministry of the Environment (MOE) waste generating number, etc.).

## **Part 2 Products**

### **2.1 NOT USED**

- .1 Not Used.

Project No.  
Various

<b>Part 3</b>	<b>Execution</b>
<b>3.1</b>	<b>NOT USED</b>
.1	Not Used.

**END OF SECTION**