

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
**Bid Receiving Public Works and Government
Services Canada/Réception des soumissions
Travaux publics et Services gouvernementaux
Canada**
107 Shireff, Suite 204
Rue 107 Shirreff
North Bay, Ontario P1B 7K8
Bid Fax: (705) 476-0778

**REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION**

**Proposal To: Public Works and Government
Services Canada**

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

**Proposition aux: Travaux Publics et Services
Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Title - Sujet REPLACE BOILER ROOM PUMPS	
Solicitation No. - N° de l'invitation EQ755-080010/A	Date 2008-12-22
Client Reference No. - N° de référence du client EQ755-080010	
GETS Reference No. - N° de référence de SEAG PW-\$TNB-801-1427	
File No. - N° de dossier TNB-8-25145 (801)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2009-02-02	Time Zone Fuseau horaire Eastern Standard Time EST
F.O.B. - F.A.B. Plant-Usine: ☐ Destination: ☒ Other-Autre: ☐	
Address Enquiries to: - Adresser toutes questions à: LeBlanc, Linda	Buyer Id - Id de l'acheteur tnb801
Telephone No. - N° de téléphone (705) 474-6104 ()	FAX No. - N° de FAX (705) 476-0778
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: PUBLIC WORKS & GOVERNMENT SERVICES CANADA SUDBURY TAXATION CENTRE 1050 NOTRE DAME AVE SUDBURY, ONTARIO P1A 2T4	

Instructions: See Herein

Instructions: Voir aux présentes

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

Issuing Office - Bureau de distribution
Public Works and Government Services Canada
107 Shirreff, Suite 204
North Bay, Ont. P1B 7K8

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

Section 1: A. INSTRUCTIONS TO BIDDERS/CONTRACTORS

THE FOLLOWING TERMS AND CONDITIONS ARE INCORPORATED HEREIN

SACC Reference	Section	Date
B3000T	Equivalent Products	16/06/06
C3011T	Exchange Rate Fluctuation	12/05/08
C5200T	Transportation Costs Information	12/05/08
A0220T	Evaluation of Price	25/05/07
A0222T	Evaluation of Price	30/11/07
A0069T	Basis of Selection	25/05/07
A3031T	Federal Contractors Program for Employment Equity - over \$25,000 and below \$200,000	12/12/08
C6000C	Limitation of Price	25/05/07
H1000C	Single Payment	12/05/08
A9116C	T1204 - Information Reporting by Contractor	30/11/07
A9117C	T1204 - Direct Request by Customer Department	30/11/07
C2000C	Taxes - Foreign-based Contractor	30/11/07
C2605C	Canadian Customs Duties and Sales Tax - Foreign-based Contractor	12/05/08
C2608C	Canadian Customs Documentation	30/11/07
A0285C	Workers Compensation	25/05/07
A9062C	Site Regulations	25/05/07
A9131C	Controlled Goods Program	12/12/08
B1501C	Electrical Equipment	16/06/06
G1005C	Insurance	12/05/08

Statement of Work

The Work to be performed is detailed under Article _____ of the resulting contract clauses.
(*Contracting officer to insert the article number which references B4007C.*)

(Derived from - Provenant de: B4007T, 16/06/06)

Improvement of Requirement During Solicitation Period

Should bidders consider that the specifications or Statement of Work contained in the bid solicitation could be improved technically or technologically, bidders are invited to make suggestions, in writing, to the Contracting Authority named in the bid solicitation. Bidders must clearly outline the suggested improvement as well as the reason for the suggestion. Suggestions that do not restrict the level of competition nor favour a particular bidder will be given consideration provided they are submitted to the Contracting Authority at least _____ days before the bid closing date. Canada will have the right to accept or reject any or all suggestions.

(Derived from - Provenant de: A9076T, 25/05/07)

Former Public Servant Certification

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

Definitions

For the purposes of this clause,

"former public servant" means a 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 and includes:

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

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the Public Service.

"pension" means a pension payable pursuant to the *Public Service Superannuation Act*, R.S., 1985, c. P-36, as indexed pursuant to the *Supplementary Retirement Benefits Act*, R.S., 1985, c. S-24.

Former Public Servant in Receipt of a Pension

Is the Bidder a FPS in receipt of a pension as defined above?

YES () NO ()

If so, the Bidder must provide the following information:

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

Work Force Reduction Program

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

If so, the Bidder must provide the following information:

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

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

Certification

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

(Derived from - Provenant de: A3025T, 30/11/07)

Former Public Servant Certification

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

Definitions

For the purposes of this clause,

"former public servant" means a 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 and includes:

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

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the Public Service.

"pension" means a pension payable pursuant to the *Public Service Superannuation Act*, R.S., 1985, c. P-36, as indexed pursuant to the *Supplementary Retirement Benefits Act*, R.S., 1985, c. S-24.

Former Public Servant in Receipt of a Pension

Is the Bidder a FPS in receipt of a pension as defined above? **YES ()** **NO ()**

If so, the Bidder must provide the following information:

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

A contract for the services of a FPS who has been retired for less than one year and who is in receipt of a pension as defined above is subject to a fee reduction (abatement formula) as required by Treasury Board Policy.

Work Force Reduction Program

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

If so, the Bidder must provide the following information:

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

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

Certification

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

(Derived from - Provenant de: A3026T, 30/11/07)

Workers Compensation Certification- Letter of Good Standing

The Bidder must have an account in good standing with the applicable provincial or territorial Workers' Compensation Board.

The Bidder must provide, within _____ (**insert number of days**) days following a request from the Contracting Authority, a certificate or letter from the applicable Workers' Compensation Board confirming the Bidder's good standing account. Failure to comply with the request may result in the bid being declared non-responsive.

(Derived from - Provenant de: A0285T, 25/05/07)

Statement of Work

Clause 1

The Contractor must perform the Work in accordance with the Statement of Work at Annex "_____".

OR Clause 2

The Contractor must perform the Work in accordance with the Statement of Work at Annex "_____" and the Contractor's technical bid entitled _____, dated _____.

OR Clause 3

The Contractor must perform the Work in accordance with the Statement of Work at Annex "_____" and the technical and management portions of the Contractor's bid entitled _____, dated _____.

(Derived from - Provenant de: B4007C, 16/06/06)

Period of the Contract

The Work is to be performed during the period of _____ to _____ (*fill in start and end date of the work*).

OR

The period of the Contract is from date of Contract to _____ inclusive (*fill in end date of the period*).

OR

The period of the Contract is from _____ to _____ inclusive (*fill in start and end date of the period*).

(Derived from - Provenant de: A9022C, 25/05/07)

Technical Authority

The Technical Authority for the Contract is:

Name: _____

Title: _____

Organization: _____

Address: _____

Telephone: ____-____-____

Facsimile: ____-____-____

E-mail: _____.

The Technical Authority named above is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Technical Authority, however the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

(Derived from - Provenant de: A1030C, 25/05/07)

Basis of Payment - Firm Price or Firm Lot Price

Option 1

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a _____ (*insert "firm price" or "firm lot price"*) of \$ _____ (*insert the amount at contract award*). Customs duties are _____ (*insert "included", "excluded" or "subject to exemption"*) and Goods and Services Tax or Harmonized Sales Tax is extra, if applicable.

Option 2

For the Work described in _____ (*insert the applicable section(s) of the statement of work or requirement to which this basis of payment applies*) of the _____ (*insert "Statement of Work" or "Requirement"*) in Annex ____:

In consideration of the Contractor satisfactorily completing its obligations under the Contract, the Contractor will be paid a _____ (*insert "firm price" or "firm lot price"*) of \$ _____ (*insert the*

amount at contract award). Customs duties are _____ (*insert* "included", "excluded" **or** "subject to exemption") and Goods and Services Tax or Harmonized Sales Tax is extra, if applicable.

(Derived from - Provenant de: C0207C, 12/05/08)

Invoicing Instructions

1. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.

Instruction to contracting officers: Use the following paragraph when invoices must be accompanied by supporting documents. The documents listed are examples only and must be revised to reflect the requirement. Delete this paragraph if no supporting documents are required.

Each invoice must be supported by:

- (a) a copy of time sheets to support the time claimed;
 - (b) a copy of the release document and any other documents as specified in the Contract;
 - (c) a copy of the invoices, receipts, vouchers for all direct expenses, and all travel and living expenses;
 - (d) a copy of the monthly progress report.
2. Invoices must be distributed as follows:
 - (a) The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.

OR

- (a) The original and one (1) copy must be forwarded to the following address for certification and payment. (*Insert the name and address of the organization*)

- (b) One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.

Solicitation No. - N° de l'invitation

EQ755-080010/A

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

tnb801

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

EQ755-080010

File No. - N° du dossier

TNB-8-25145

CCC No./N° CCC - FMS No/ N° VME

Instruction to contracting officers: Insert additional distribution as applicable. The following is an example.

- (c) one (1) copy must be forwarded to the consignee.

(Derived from - Provenant de: H5001C, 12/12/08)

ANNEX ^A^

PWGSC, Ontario Region, Arch. Master Spec, Rev. 2008-07-24

PWGSC Ontario	SPECIFICATION	Section 00 00 00
Region Project	TITLE SHEET	Page 1
Number R.025391.008		2009-03-31

Project Title SUDBURY, ONTARIO
SUDBURY TAXATION CENTRE
1050 NOTRE DAME AVENUE

BOILER ROOM
PUMPS REPLACEMENT

Project Number R.025391.008

Project Date 2009-03-31

END

A-NMS000001++

PWGSC Ontario

Region Project

Number R.025391.008

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2009-03-31

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<u>Division 01 - General Requirements</u>		
01 11 01	GENERAL INSTRUCTIONS MINOR WORKS	12
01 35 29.06	HEALTH AND SAFETY REQUIREMENTS	7
01 91 00	COMMISSIONING - GENERAL REQUIREMENTS	4
<u>Division 23 - Heating, Ventilating and Air-Conditioning (HVAC)</u>		
23 05 00	COMMON WORK RESULTS - MECHANICAL	6
23 21 23	HYDRONIC PUMPS	5

PART 1 - GENERAL

1.1 MINIMUM
STANDARDS

- .1 Execute work to meet or exceed:
 - .1 National Building Code of Canada 2005, National Fire Code of Canada 2005, Ontario Building Code 2006 and any other code of provincial or local application, including all amendments up to project date, provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.
 - .2 Rules and regulations of authorities having jurisdiction.
 - .3 Fire Commissioner of Canada, No. 301, Standard for Construction Operations, and No. 302, Standard for Welding and Cutting, June 1982.
 - .4 Observe and enforce construction safety measures required by National Building Code 2005, Part 8 Safety Measures at Construction and Demolition Sites, Occupational Health and Safety Act and Regulations for Construction Projects, Revised Statutes of Ontario 1990, Chapter O.1 as amended, O. Reg. 213/91 as amended by O. Reg. 631/94, O. Reg. 143/99, O. Reg. 571/99, O. Reg. 145/00, O. Reg. 527/00, R.R.O. 1990, Reg. 834, O. Reg. 278/05 (Asbestos), Workplace Safety and Insurance Board and municipal statutes and authorities.
 - .5 Environmental Protection Act, O. Reg. 102/94 and O. Reg. 103/94.
 - .6 Comply with CAN/CSA-B651-04, Accessible Design for the Built Environment, unless specified otherwise. In any case of conflict or discrepancy between the building codes and CAN/CSA-B651, the requirements of CAN/CSA-B651 shall apply.

1.2 AUTHORITIES
HAVING JURISDICTION

- .1 The Fire Commissioner of Canada is the sole authority having jurisdiction over this project with regards fire standards.
- .2 Fire Testing requirements are for ULC or WHI listed and labelled products.
- .3 Substitution of ULI or other Fire testing reports for required ULC and WHI testing is acceptable to the Departmental Representative only if the issuing organization is accredited and listed in the "Directory of Accredited Certification Organizations (CAN-P-1505C), 1993"

- 1.2 AUTHORITIES HAVING JURISDICTION (Cont'd)
- .3 (Cont'd)
published by the Standards Council of Canada, 1-800-267-8220. Testing shall be to the Canadian standards and the tested products shall bear the appropriate label approved by the Fire Commissioner of Canada.
- .4 Submit 3 copies of test reports under the letterhead of the accredited organization to the Departmental Representative.
- 1.3 TAXES
- .1 Pay applicable Federal, Provincial and Municipal taxes.
- 1.4 FEES, PERMITS, CERTIFICATES AND LETTERS
- .1 Provide authorities having jurisdiction with information requested.
- .2 Pay fees and obtain certificates, permits and letters required.
- .3 Obtain Fire Commissioner of Canada Inspection Letter of Deficiencies from Departmental Representative. Submit a copy of the FCC letter with a list of remedial measures taken to correct deficiencies.
- .4 Furnish certificates, permits and letters when requested.
- 1.5 EXAMINATION
- .1 Examine existing conditions and determine conditions affecting work.
- 1.6 DOCUMENTS
- .1 Keep one copy of contract documents and shop drawings on the site.
- .2 Specifications shall govern over Drawings and schedules.
- 1.7 ELECTRONIC SUBMITTALS
- .1 Submit number of hard copies specified for each type and format of submittal and in also submit in electronic format as pdf files. Forward pdf files on CD or through email.
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1.8 CONTRACTOR'S
AS-BUILT DRAWINGS
AND SPECIFICATIONS

- .1 As work progresses, neatly record significant deviations from the Contract drawings and specifications using fine, red marker on full size white prints and specifications. Make the same changes on the electronic files.
- .2 Neatly print lettering and numbers in size to match original. Lines may be drawn free-hand but shall be neat and accurate. Add at each title block note: "AS BUILT". Also circle on List of Drawings each title and number of drawing marked with "AS-BUILT" information. Circle on Table of Contents each specification section number and title of specification sections marked with "AS-BUILT" information.
- .3 Departmental Representative will provide one electronic set of drawings, schedules and specifications for as-built drawing and specification purposes.
 - .1 Drawings are in Autocad.
 - .2 Specifications are in NMSEdit Professional.
 - .3 Amendments are in MS Word.
- .4 Record following significant deviations:
 - .1 Depths of various elements of foundation.
 - .2 Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvement.
 - .3 Location of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of structure.
 - .4 Field changes of dimension.
 - .5 Other significant deviations which are concealed in construction and can not be identified by visual inspection.
 - .6 Alternative materials and systems installed replacing original materials and systems specified by trade name.
- .5 Turn one set, paper copy and electronic copy, of AS-BUILT drawings and specifications over to Departmental Representative on completion of work.
- .6 If project is completed without significant deviations from Contract drawings and specifications submit to Departmental Representative one set of drawings and specifications marked "AS-BUILT".

1.9 OPERATIONS AND .1
MAINTENANCE DATA

- .1 On completion of project submit to Departmental Representative 3 copies of Operations and Maintenance Data assembled in three 255 x 295 mm vinyl-covered, 3-ring, loose-leaf binders with title sheet labelled "Operations Data and Maintenance Manual", project title, date and list of contents. Organize content into applicable sections between hard paper dividers with labelled tabs.
- .2 Include in each binder maintenance instructions for finished surfaces, warranties and guarantees in form approved by Departmental Representative and operations and maintenance data for equipment and systems with parts list, suppliers' names and addresses, complete set of final shop drawings (bound separately), names, addresses and phone numbers of sub-contractors and suppliers, list of materials with names of manufacturer and source of supply. Neatly type lists and rates. Use clear drawings, diagrams or manufacturer's literature.

1.10 SHOP DRAWINGS .1
AND PRODUCT DATA
SHEETS

- .1 Prior to submission check and certify as correct, shop drawings and product data sheets. Issue to Departmental Representative each submission at least 14 days before dates reviewed submission will be needed.
 - .2 Where technical sections specify that shop drawings bear the stamp of a Registered Professional Engineer, the Engineer must be registered in the Province of Ontario.
 - .3 Submit 3 prints and 1 electronic copy of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.
 - .4 Submit 3 prints and 1 electronic copy of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
 - .5 The review of shop drawings by Public Works and Government Services Canada (PWGSC) is for sole
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- 1.10 SHOP DRAWINGS .5 (Cont'd)
 AND PRODUCT DATA
 SHEETS
(Cont'd)
- purpose of ascertaining conformance with general concept. This review shall not mean that PWGSC approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting all requirements of construction and Contract Documents. Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of all sub-trades.
- .6 Submit 3 prints and 1 electronic of product data sheets for standard manufactured items. Indicate VOC's in g/l for adhesives, primers, sealants, paints, curing and sealing compounds, sealers, particleboard, plywood, preserved wood, and any other product that emits more than 25 g/l VOC during application, curing, initial off gassing or end use.
- .7 Responsibility for errors, omissions or deviations from requirements of Contract Documents is not relieved by Departmental Representative's review of submittals.
- 1.11 DESIGN DATA, .1 Prior to submission check and certify as
 TEST REPORTS, correct each submission. Issue to Departmental
 CERTIFICATES, Representative each submission at least 14 days
 MANUFACTURER'S before reviewed submission will be needed.
 INSTRUCTIONS,
 MANUFACTURER'S .2 Submit 3 white print copies of each item
 FIELD REPORTS requested.
- .3 For products bearing the 'Ecologo' of the Environmental Choice Program, Environment Canada, Canadian Environmental Protection Act, Environmental Choice Product Guidelines:
 .1 Submit two copies of the licensing criteria statements and the verification of compliance with Sections 3(a) and 3(b) of the ECP to the Departmental Representative. For adhesives, paints, primers and sealants, cleaners and degreasers, floor polishes, water borne surface coatings, indicate VOC in g/l.

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| <p>1.11 DESIGN DATA,
TEST REPORTS,
CERTIFICATES,
MANUFACTURER'S
INSTRUCTIONS,
MANUFACTURER'S
FIELD REPORTS
<u>(Cont'd)</u></p> | <p>.3 (Cont'd)
.2 Alternatively, material in original
containers bearing the 'Ecologo' or products
bearing the 'Ecologo' will satisfy this
requirement.
.4 Responsibility for errors, omissions or
deviations from requirements of Contract
Documents is not relieved by Departmental
Representative's review of submittals.</p> |
| <p>1.12 ADDITIONAL
DRAWINGS
<u></u></p> | <p>.1 Departmental Representative may furnish
additional drawings to clarify work.
.2 Such drawings become part of Contract
Documents.</p> |
| <p>1.13 PROTECTION
<u></u></p> | <p>.1 Protect existing work from damage.
.2 Replace damaged existing work with material and
finish to match original.</p> |
| <p>1.14 EXISTING
SERVICES
<u></u></p> | <p>.1 Establish location, protect and maintain
existing utility lines.
.2 Use designated existing sanitary facilities.
.3 Use existing water and electrical services at
no cost.
.4 Use elevator designated, protect walls from
damage.</p> |
| <p>1.15 METRIC SIZED
MATERIALS
<u></u></p> | <p>.1 SI metric units of measurement are used
exclusively on the drawings and in the
specifications for this project.
.2 The Contractor is required to provide metric
products in the sizes called for in the Contract
Documents except where a valid claim can be made
that a particular product is not available on
the Canadian market.
.3 Claims for exemptions from use of metric sized
products shall be in writing and fully
substantiated with supportive documentation.</p> |
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|--|--|
| <p>1.15 METRIC SIZED
MATERIALS
<u>(Cont'd)</u></p> | <p>.3 (Cont'd)
Promptly submit application to Departmental Representative for consideration and ruling. Non-metric sized products may not be used unless Contractor's application has been approved in writing by the Departmental Representative.</p> <p>.4 Difficulties caused by the Contractor's lack of planning and effort to obtain modular metric sized products which are available on the Canadian market will not be considered sufficient reasons for claiming that they cannot be provided.</p> <p>.5 Claims for additional costs due to provision of specified modular metric sized products will not be considered.</p> |
| <p>1.16 MATERIAL AND
EQUIPMENT
<u></u></p> | <p>.1 Use new products unless otherwise specified.</p> <p>.2 Deliver and store material and equipment to manufacturer's instructions with manufacturer's labels and seals intact.</p> <p>.3 When material or equipment is specified by standard or performance specifications, upon request of Departmental Representative, obtain from manufacturer an independent testing laboratory report, stating that material or equipment meets or exceeds specified requirements.</p> |
| <p>1.17 CUTTING AND
REMEDIAL WORK
<u></u></p> | <p>.1 Co-ordinate work to keep cutting and remedial work to a minimum.</p> <p>.2 Execute cutting and remedial work required. Notify Departmental Representative before cutting, boring or sleeving structural members.</p> <p>.3 Prior to cutting or drilling horizontal or vertical surfaces including concrete, concrete block or other structural substrate, determine location of reinforcing, service lines, pipes, conduits or other items by x-ray, ground penetrating radar or other appropriate method. Submit findings to Departmental Representative prior to cutting or drilling.</p> <p>.4 Use specialists in affected material to execute cutting and remedial work.</p> |
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- 1.17 CUTTING AND REMEDIAL WORK
(Cont'd)
- .5 Match work to adjoining construction and finishes.
 - .6 Fit components tight to adjoining surfaces.
 - .7 Make good surfaces exposed or disturbed by work with material and finish to match existing adjoining surfaces.

- 1.18 FASTENINGS
- .1 Provide fastenings of type, size and spacing required to assure secure anchorage.
 - .2 Obtain Departmental Representative's permission before using explosive actuated fasteners.

- 1.19 CO-ORDINATION AND CO-OPERATION
- .1 Site will be occupied during execution of work.
 - .2 Building will be occupied during execution of work.
 - .3 Work area will be occupied during execution of work.
 - .4 Execute work with minimum disturbance to occupants and normal use of work area.
 - .5 Maintain access and exits.
 - .6 Where security has been reduced by work of contract, provide temporary means to maintain security.

- 1.20 ALTERATIONS TO EXISTING BUILDING
- .1 Remove and recycle or dispose of:
 - .1 Mechanical and electrical items as indicated.
 - .2 Provide new openings required in existing construction.
 - .3 Block in openings where items removed with material and finish to match existing adjoining construction.

- 1.21 INSPECTION AND TESTING .1 When initial tests and inspections reveal work not to contract requirements, pay for tests and inspections required by Departmental Representative on corrected work.
- 1.22 COST BREAKDOWN .1 Within one week of notification of acceptance of bid furnish a cost breakdown by Section aggregating contract price.
- .2 Within 48 hours of bid acceptance submit a list of subcontractors.
- 1.23 SCHEDULING .1 On award of contract submit bar chart construction schedule for work, indicating anticipated progress stages within time of completion. When schedule has been reviewed by the Departmental Representative take necessary measures to complete work within scheduled time. Do not change schedule without notifying Departmental Representative.
- 1.24 CLEANING .1 Maintain project free of accumulated waste and rubbish.
- .2 Final cleaning:
- .1 Remove temporary protection.
- .2 Remove dust, dirt and foreign matter from surfaces. HEPA vacuum interior surfaces.
- 1.25 CONSTRUCTION & DEMOLITION WASTE .1 Carefully deconstruct and source separate materials/equipment and divert from D&C waste destined for landfill to maximum extent possible. Reuse, recycle or sell material off site for reuse except where indicated otherwise. On site sales are not permitted. Target for this project is 75% diversion from landfill.
- .2 For construction and demolition projects, even for those not over 2,000 m² total floor area, source separate waste and maintain waste audits in accordance with the Environmental Protection Act, Ontario Regulation 102/94 and Ontario Regulation 103/94.
- .1 Provide facilities for collection, handling and storage of source separated wastes.

1.25 CONSTRUCTION & .2
DEMOLITION WASTE
(Cont'd)

(Cont'd)

- .2 Source separate the following waste:
 - .1 Brick and portland cement concrete.
 - .2 Corrugated cardboard.
 - .3 Wood, not including painted or treated wood or laminated wood.
 - .4 Gypsum board, unpainted.
 - .5 Steel.
- .3 Submit a waste reduction workplan indicating the materials and quantities of material that will be recycled and diverted from landfill.
 - .1 Indicate how material being removed from the site will be reused or recycled.
- .4 Submit proof that all waste is being disposed of at a licensed land fill site or waste transfer site. A copy of the disposal/waste transfer site's license and a letter verifying that said landfill site will accept the waste must be supplied to Departmental Representative prior to removal of waste from the demolition site.

1.26 ASBESTOS
DISCOVERY

- .1 If during alteration work existing asbestos material is discovered (e.g. fireproofing, acoustic or thermal insulation, pipe or tank covering) stop work and immediately notify Departmental Representative. Do not remove any existing material containing asbestos fibres.

1.27 DESIGNATED
SUBSTANCES

- .1 The work area has been surveyed for the presence of designated substances referred to in the Occupational Health and Safety Act and Regulations for Construction Projects, O.Reg. 213/91 as amended.
- .2 The list of designated substances present at the project site is attached at the end of this section.
- .3 Provide copies of this list to each prospective subcontractor prior to entering into a contract with them.
- .4 Post prominent notices identifying and warning of the hazardous agent in the part of the workplace in which the agent is found or used. Notices shall be in English and other languages prescribed under the Act.

1.28 SPECIAL PROTECTION AND PRECAUTIONS .1 Comply with the requirements of the Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and the provision of material safety data sheets acceptable to HRSDC - Labour Program.

1.29 IAQ - INDOOR AIR QUALITY .1 Comply with CSA Z204-94(R1999), Guideline for Managing Indoor Air Quality in Office Buildings.

1.30 POLLUTION CONTROL .1 Spills of deleterious substances:
 .1 Immediately contain, limit spread and clean up in accordance with provincial regulatory requirements.
 .2 Report immediately to Ontario Spills Action Centre: 1-800-268-6060.
 .3 Further information on dangerous goods emergency cleanup and precautions including a list of companies performing this work can be obtained from the Transport Canada 24-hour number (613) 996-6666 collect.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not used.

PART 1 - GENERAL

1.1 REFERENCES

- .1 Canadian Standards Association (CSA): Canada
 - .1 CSA-S350-M1980(R2003), Code of Practice for Safety in Demolition of Structures.
- .2 National Building Code 2005 (NBC):
 - .1 NBC 2005, Division B, Part 8 Safety Measures at Construction and Demolition Sites.
- .3 National Fire Code 2005 (NFC):
 - .1 NFC 2005, Division B, Part 2 Emergency Planning, subsection 2.8.2 Fire Safety Plan.
- .4 Province of Ontario:
 - .1 Occupational Health and Safety Act Revised Statutes of Ontario 1990, Chapter O.1 as amended, and Regulations for Construction Projects, O. Reg. 213/91 as amended.
 - .2 Workplace Safety and Insurance Act, 1997.
 - .3 Municipal statutes and authorities.
- .5 Fire Commissioner of Canada (FCC):
 - .1 FC-301 Standard for Construction Operations, June 1982.
 - .2 FC-302 Standard for Welding and Cutting, June 1982.

Labour Program
Fire Protection Engineering Services
4900 Yonge Street 8th Floor
Willowdale, Ontario M2N 6A8

and copies may be obtained from:

Human Resources and Social Development Canada
Labour Program
Fire Protection Engineering Services
Ottawa, Ontario K1A 0J2

1.2 SUBMITTALS

- .1 Make submittals in accordance with Section 01 11 01.
- .2 Submit site-specific Health and Safety Plan:
Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
 - .1 Results of site specific safety hazard assessment.

1.2 SUBMITTALS
(Cont'd)

- .2 (Cont'd)
- .2 Results of safety and health risk or hazard analysis for site tasks and operations found in work plan.
- .3 Provide a Fire Safety Plan, specific to the work location, in accordance with NBC, Division B, subsection 8.1.1.1 prior to commencement of work. The plan shall be coordinated with, and integrated into, the existing Emergency Procedures and Evacuation Plan in place at the site. Departmental Representative will provide Building Emergency Procedures and Evacuation Plan. Deliver two copies of the Fire Safety Plan to the Departmental Representative not later than 14 days before commencing work.
- .4 Contractor's and Sub-contractors' Safety Communication Plan.
- .5 Contingency and Emergency Response Plan addressing standard operating procedures specific to the project site to be implemented during emergency situations. Coordinate plan with existing Building Emergency Response requirements and procedures provided by Departmental Representative.
- .3 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within two days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within two days after receipt of comments from Departmental Representative.
- .4 Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
- .5 Submit records of Contractor's Health and Safety meetings when requested.
- .6 Submit three copies of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative, weekly.
- .7 Submit copies of orders, directions or reports issued by health and safety inspectors of the authorities having jurisdiction.
- .8 Submit copies of incident and accident reports.
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|------------------------------------|-----|--|
| <u>1.2 SUBMITTALS</u>
(Cont'd) | .9 | Submit Material Safety Data Sheets (MSDS). |
| | .10 | Submit Workplace Safety and Insurance Board (WSIB)- Experience Rating Report. |
| <u>1.3 FILING OF NOTICE</u> | .1 | File Notice of Project with Provincial authorities prior to commencement of Work. |
| <u>1.4 WORK PERMIT</u> | .1 | Obtain building permits related to project prior to commencement of Work. |
| | .2 | Obtain Hot Work Permit from Property Manager. |
| <u>1.5 SAFETY ASSESSMENT</u> | .1 | Perform site specific safety hazard assessment related to project. |
| <u>1.6 MEETINGS</u> | .1 | Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work. |
| <u>1.7 REGULATORY REQUIREMENTS</u> | .1 | Comply with the Acts and regulations of the Province of Ontario. |
| | .2 | Comply with specified standards and regulations to ensure safe operations at site. |
| <u>1.8 PROJECT/SITE CONDITIONS</u> | .1 | Work at site will involve contact with:
.1 Silica in concrete
.2 Mercury in switches, fluorescent light tubes and thermostats.
.3 Solder caulking in ball fittings of cast iron pipes. |
| <u>1.9 GENERAL REQUIREMENTS</u> | .1 | Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications. |
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- 1.9 GENERAL REQUIREMENTS
(Cont'd)
- .2 Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns either accepting or requesting improvements.
- .3 Relief from or substitution for any portion or provision of minimum Health and Safety standards specified herein or reviewed site-specific Health and Safety Plan shall be submitted to Departmental Representative in writing.
- 1.10 COMPLIANCE REQUIREMENTS
- .1 Comply with Ontario Occupational Health and Safety Act, R.S.O. 1990 Chapter O.1, as amended.
- 1.11 RESPONSIBILITY
- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.
- .3 Where applicable the Contractor shall be designated "Constructor", as defined by Occupational Health and Safety Act for the Province of Ontario.
- 1.12 UNFORSEEN HAZARDS
- .1 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, immediately stop work and advise Departmental Representative verbally and in writing.
- .2 Follow procedures in place for Employees Right to Refuse Work as specified in the Occupational Health and Safety Act for the Province of Ontario.
-

- 1.13 HEALTH AND SAFETY CO-ORDINATOR .1 Employ and assign to Work, competent and authorized representative as Health and Safety Co-ordinator. Health and Safety Co-ordinator must:
- .1 Have working knowledge of occupational safety and health regulations.
 - .2 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
 - .3 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.
 - .4 Be on site during execution of Work and report directly to site supervisor.
- 1.14 POSTING OF DOCUMENTS .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province of Ontario, and in consultation with Departmental Representative.
- .1 Contractor's Safety Policy.
 - .2 Constructor's Name.
 - .3 Notice of Project.
 - .4 Name, trade, and employer of Health and Safety Representative or Joint Health and Safety Committee members (if applicable).
 - .5 Ministry of Labour Orders and reports.
 - .6 Occupational Health and Safety Act and Regulations for Construction Projects for Province of Ontario.
 - .7 Address and phone number of nearest Ministry of Labour office.
 - .8 Material Safety Data Sheets.
 - .9 Written emergency Response Plan.
 - .10 Site Specific Safety Plan.
 - .11 Valid certificate of first aider on duty.
 - .12 WSIB "In Case of Injury At Work" poster.
 - .13 Location of toilet and cleanup facilities.
- 1.15 CORRECTION OF NON-COMPLIANCE .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.
- .2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.
-

1.15 CORRECTION OF NON-COMPLIANCE .3 Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected.
(Cont'd)

1.16 BLASTING .1 Blasting or other use of explosives is not permitted.

1.17 POWDER ACTUATED DEVICES .1 Use powder actuated devices only after receipt of written permission from Departmental Representative.

1.18 WORK STOPPAGE .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.
.2 Assign responsibility and obligation to Competent Supervisor to stop or start Work when, at Competent Supervisor's discretion, it is necessary or advisable for reasons of health or safety. Departmental Representative may also stop Work for health and safety considerations.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not used.

PART 1 - GENERAL

1.1 SECTION INCLUDES .1 Includes general requirements for commissioning facilities and facility systems.

1.2 QUALITY ASSURANCE .1 Provide testing organization services under provisions.

.2 Testing organization: current member in good standing of AABC or NEBB certified to perform specified services.

.3 Comply with applicable procedures and standards of the certification sponsoring association.

.4 Perform services under direction of supervisor qualified under certification requirements of sponsoring association.

1.3 REFERENCES .1 Associated Air Balance Council (AABC): National Standards For Field Measurements and Instrumentation, Total Systems Balance, Air Distribution-Hydronics Systems, 2002.

.2 ASHRAE Guideline 1-1996, the HVAC Commissioning Process.

.3 ASHRAE Guideline 4-1993, Preparation of Operating and Maintenance Documentation for Building System.

.4 NEBB Procedural Standards for Building Systems Commissioning (1999).

.5 NETA Acceptance Testing Specifications 2003 for Electrical Power Distribution Equipment and Systems.

1.4 SUBMITTALS .1 Within 15 working days of Award of Contract, submit name of Testing organization and Contractor personnel proposed to perform services who has managerial responsibilities for coordination of all commissioning activities.

- 1.4 SUBMITTALS
(Cont'd)
- .2 Submit documentation to confirm Testing organization and Contractor personnel compliance with quality assurance provision.
 - .3 Submit 3 preliminary specimen copies of each type of startup checklist, product information and performance verification report forms proposed for use.
 - .4 Submit completed report forms within 3 days after completion of each testing to Consultant for review and verification.
 - .5 Fifteen days prior to Substantial Performance, submit 3 copies of final reports on applicable forms for functional performance verification.
 - .6 Submit post-commissioning reports of testing, adjusting, and balancing postponed due to seasonal, climatic, occupancy, or other reasons beyond Contractor's control, promptly after execution of those services.

- 1.5 REPORT FORMS
- .1 Testing organization [Contractor personnel having managerial responsibility] shall make reports.
 - .2 Report forms shall include:
 - .1 Startup Checklists.
 - .2 Product Information (PI) Report forms.
 - .3 Performance Verification (PV) Report forms.
 - .3 Ensure each form bears signature of recorder, and that of supervisor of reporting organization.
 - .4 Submit signed form to Departmental Representative for review, approval and signature.
 - .5 Identify each instrument used for testing, adjusting and balancing and its latest date of calibration.

- 1.6 CONTRACTOR'S RESPONSIBILITIES
- .1 Prepare each system for testing and balancing.
 - .2 Cooperate with testing organization and provide access to equipment and systems.
-

- 1.6 CONTRACTOR'S RESPONSIBILITIES
(Cont'd)
- .3 Provide personnel and operate systems at designated times, and under conditions required for proper testing, adjusting, and balancing.
 - .4 Notify testing organization and Departmental Representative 7 days prior to time project will be ready for testing, adjusting, and balancing.
 - .5 Accurately record data for each step.
 - .6 Report to Departmental Representative any deficiencies or defects noted during performance of services.
 - .7 Correct deficiencies identified in accordance with Departmental Representative's written instructions.
- 1.7 EXECUTION
- .1 Test hydronic systems, adjust and record liquid flow at each piece of equipment.

PART 2 - PRODUCTS

- 2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

- 3.1 NOT USED .1 Not Used.

PART 1 - GENERAL

- 1.1 GENERAL .1 This Section covers items common to more than one section of the Mechanical Division 23.
- .2 "Provide" shall mean "supply, install and connect".
- .3 Provide new materials, equipment and plant of proven design and quality, and of current models with published ratings for which replacement parts are readily available.
- 1.2 EQUIPMENT LIST .1 Complete list of equipment to be used on this project and forming part of bid documents by adding manufacturer's name, model number, and submit for approval.
- .2 The Contractor is to complete the following list of equipment with manufacturer's name and model number:
- .1 Pumps: Maker and model
- .3 It is the Contractor's responsibility to ensure that the equipment to be used will meet the performance specifications and will fit the spaces allocated.
- .4 Submit for approval within 48 h after Award of Contract.
- 1.3 CUTTING AND REMEDIAL WORK .1 Cutting and remedial work is specified in Section 01 11 01.
- .2 Assume full responsibility for laying out mechanical work and for any damage caused by incorrectly located equipment and mechanical services.
- 1.4 CO-ORDINATION .1 Locate distribution systems, equipment and materials to provide minimum interference and maximum useable space.
-

- 1.4 CO-ORDINATION .2 Where interference occurs, Departmental Representative shall approve relocation of equipment and materials.
- (Cont'd)
- 1.5 DRAWINGS .1 Working drawings, except where dimensioned, indicate general mechanical layouts only. Do not scale.
- .2 Existing equipment and services shown on the drawings:
- .1 The information shown on the drawings is incomplete and is for reference only. Some of the existing equipment, ducts, pipes and other services are not shown on the drawings.
- .2 The Contractor shall make arrangements to examine existing conditions, determine conditions affecting the work, and verify sizes and location of existing equipment, ducts, pipes and any other services. Refer to Section 01 11 01 for instructions regarding site visits.
- .3 Unless the discrepancies are noted and reported to the Departmental Representative prior to close of the bid, the Contractor shall be responsible for the work to relocate existing equipment and to reroute existing ducts, pipes and any other services required for the installation of new work at no extra cost to the contract.
- .3 If required by Departmental Representative, provide field drawings to show relative positions of various services. Obtain approval before beginning work.
- 1.6 SHOP DRAWINGS AND PRODUCT DATA SHEETS .1 Submit shop drawings and product data sheets for major equipment listed in each section.
- .2 Submit early enough to permit Project Schedules to be met.
- .3 Show materials; sizes, dimensions, performance ratings, curves and operating characteristics, compliance with codes and standards, wiring, controls, piping diagrams, installation instructions, fabrication, assembly and installation details.
- .4 For additional requirements pertaining to shop drawings and product data refer to Section 01 11 01.
-

1.7 OPERATION AND MAINTENANCE DATA .1 Supply operating and maintenance instructions complete with names and addresses of spare parts suppliers in accordance with requirements of Section 01 11 01.

1.8 EQUIPMENT DESIGN AND INSTALLATION .1 Uniformity:
 .1 For equipment or material of same type or classification, use product of one manufacturer.
 .2 Installation:
 .1 Install equipment to manufacturer's recommendations with adequate and easy access for inspection, servicing and lubrication.
 .2 Install equipment to permit maintenance and disassembly with minimum disturbance to connecting piping and duct systems and without interference with building structure or equipment.
 .3 Provide support brackets, bases, and all necessary fastenings.

1.9 ELECTRIC MOTORS AND CONTROLS .1 Electrical equipment shall bear CSA label. Obtain inspection labels required by Provincial authority having jurisdiction.
 .2 Use high efficiency motors. Minimum acceptable motor efficiency levels shall be based on the Ontario Hydro latest table of motor efficiency levels.
 .3 Unless otherwise specified or indicated, motors ½ HP and larger shall be 3 phase.

1.10 GUARDS .1 Provide vibration free guards on exposed drives and rotating parts to meet safety requirements of Provincial Ministry of Labour and local authorities having jurisdiction.

1.11 EQUIPMENT SUPPORTS .1 Mount base mounted equipment on chamfered edge concrete housekeeping pads, minimum of 100 mm high and 50 mm larger than equipment dimensions all around.

1.12 PIPING
INSTALLATION

- .1 Conform to requirements of ASME B31.1-2007 Power Piping.
- .2 Provide dielectric couplings where piping of dissimilar metals are joined.
- .3 Provide easily accessible unions close to equipment, to permit easy removal of equipment with minimum disturbance to piping systems.
- .4 Drainage:
 - .1 Extend equipment drain piping to discharge into floor or hub drain.
- .5 Expansion and Contraction:
 - .1 Support piping to prevent any stress or strain from occurring at connections to equipment.
 - .2 Provide steel anchors welded to piping, fastened to building structure or embedded in concrete pier so that forces acting on anchor points are restrained without causing damage to structure or systems.

1.13 TESTS

- .1 Give written 48 hours notice of date when tests will be made.
- .2 Conduct tests in presence of Departmental Representative and representatives of agencies having jurisdiction.
- .3 Bear all costs in connection with all tests.
- .4 Obtain acceptance certificates from authorities having jurisdiction. Work shall not be considered complete until certificates are delivered to the Departmental Representative.
- .5 Testing and balancing:
 - .1 Use qualified personnel approved by the Departmental Representative to test and balance systems and keep records of operating results.
 - .2 After systems balanced and tests concluded, submit test and balance report showing relevant operating data of equipment and systems.
 - .3 Report shall certify compliance with requirements of drawings and specifications.

- 1.14 PAINTING .1 Apply at least one coat of corrosion resistant primer paint to ferrous supports and site fabricated work.
- .2 Prime and touch up marred finished paintwork to match original.
- .3 Restore to new condition, finishes which have been damaged too extensively to be merely primed and touched up.

- 1.15 INSTRUCTION OF OPERATING STAFF .1 Furnish competent instructors to fully instruct operating staff in care, adjustment and operation of mechanical systems. Use factory trained instructors.
- .2 Instruct during regular work hours before systems accepted and turned over to operating staff for regular operation.
- .3 Where significant changes or modifications in equipment are made under terms of guarantee, instruct operating staff about changes or modifications.

PART 2 - PRODUCTS

- 2.1 NOT USED .1 Not used.

PART 3 - EXECUTION

- 3.1 NOT USED .1 Not used.

PART 1 - GENERAL

- | | | |
|-----------------------------|----|--|
| <u>1.1 SECTION INCLUDES</u> | .1 | Materials, equipment selection, installation and start up for hydronic system pumps. |
| <u>1.2 RELATED SECTIONS</u> | .1 | Section 01 3529.06 - Health and Safety Requirements. |
| | .2 | Section 01 91 00 - Commissioning. |
| <u>1.3 REFERENCES</u> | .1 | American Society of Heating Refrigeration and Air-Conditioning Engineers (ASHRAE).
.1 Standard 90.1-2001 Energy Standard for Buildings Except Low-Rise Residential Buildings. |
| | .2 | Electrical Equipment Manufacturers Advisory Council (EEMAC). |
| | .3 | Canadian Standards Association (CSA International).
.1 CAN/CSA-B214-01, Installation Code for Hydronic Heating Systems. |
| | .4 | National Electrical Manufacturers Association (NEMA).
.1 NEMA MG 1-2003, Motors and Generators. |
| <u>1.4 SUBMITTALS</u> | .1 | Submittals in accordance with Section 01 11 01. |
| | .2 | Submit shop drawings and product data in accordance with Section 01 11 01. |
| | .3 | Submit manufacturer's detailed composite wiring diagrams for control systems showing factory installed wiring and equipment on packaged equipment or required for controlling devices or ancillaries, accessories and controllers. |
| | .4 | Submit product data of pump curves for review showing point of operation. |
| | .5 | Indicate piping, valves and fittings shipped loose by packaged equipment supplier, showing their final location in field assembly. |

<u>1.4 SUBMITTALS</u> (Cont'd)	.6	Provide maintenance data for incorporation into manual.
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<u>1.5 HEALTH AND SAFETY</u>	.1	Do construction occupational health and safety in accordance with Section 01 35 29.06.
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<u>1.6 WASTE MANAGEMENT AND DISPOSAL</u>	.1	Separate waste materials for reuse and recycling in accordance with Section 01 11 01.
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PART 2 - PRODUCTS

<u>2.1 EQUIPMENT</u>	.1	Do component selection and sizing to: CAN/CSA-B214.
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<u>2.2 SINGLE SUCTION CENTRIFUGAL PUMP</u>	.1	General: bronze fitted pump complete with motor.
	.2	Base: common fabricated steel with drip rim and tapping for drain connection.
	.3	Volute: Cast iron radially split, end suction, flanged suction and discharge, with drain plug and vent cock, suction and discharge pressure gauge tappings.
	.4	Impeller: Bronze.
	.5	Seal assembly: Mechanical.
	.6	Coupling: flexible self-aligning.
	.7	Motor: EEMAC Class B, NEMA MG 1 , squirrel cage induction, 1,750 r/min. 7.46 kW, continuous duty, drip proof, ball bearing, maximum temperature rise 50 degrees C.
	.8	Capacity: as indicated in pump schedule in drawing M1.
	.9	Design pressure: as indicated in pump schedule in drawing M1.

PART 3 - EXECUTION3.1 INSTALLATION

- .1 Do Work in accordance with CAN/CSA-B214.
- .2 Base mounted type: supply templates for anchor bolt placement. Furnish anchor bolts with sleeves. Place level, shim unit and grout. Align coupling in accordance with manufacturer's recommended tolerance.
- .3 Ensure that pump body does not support piping or equipment. Provide stanchions or hangers for this purpose. Refer to manufacturer's installation instructions for details.
- .4 Pipe drain tapping to floor drain.
- .5 Install volute venting pet cock in accessible location.
- .6 Check rotation prior to start-up.
- .7 Install pressure gauge test cocks.

3.2 START-UP

- .1 General
 - .1 In accordance with Section 01 91 00; supplemented as specified herein.
 - .2 In accordance with manufacturer's recommendations.
 - .2 Procedures:
 - .1 Before starting pump, check that cooling water system over-temperature and other protective devices are installed and operative.
 - .2 After starting pump, check for proper, safe operation.
 - .3 Check installation, operation of mechanical seals. Adjust as necessary.
 - .4 Check base for free-floating, no obstructions under base.
 - .5 Run-in pumps for 12 continuous hours.
 - .6 Verify operation of over-temperature and other protective devices under low- and no-flow condition.
 - .7 Eliminate air from scroll casing.
 - .8 Adjust water flow rate through water-cooled bearings.
 - .9 Adjust flow rate from pump shaft stuffing boxes to manufacturer's recommendation.
-

3.2 START-UP
(Cont'd)

- .2 Procedures: (Cont'd)
- .10 Adjust alignment of piping and conduit to ensure true flexibility at all times.
 - .11 Eliminate cavitation, flashing and air entrainment.
 - .12 Adjust pump shaft seals.
 - .13 Measure pressure drop across strainer when clean and with flow rates as finally set.

3.3 PERFORMANCE
VERIFICATION (PV)

- .1 General
- .1 In accordance with Section 01 91 00: General Requirements, supplemented as specified herein.
 - .2 In accordance with manufacturer's recommendations.
- .2 Assumptions: these PV procedures assume that:
- .1 Manufacturer's performance curves are accurate.
 - .2 Valves on pump suction and discharge provide tight shut-off.
- .3 Multiple Pump Installations - Series and Parallel:
- .1 Repeat PV procedures specified above for pump performance and pump BHP for combinations of pump operations.
- .4 Mark points of design and actual performance at design conditions as finally set upon completion of TAB.
- .5 Commissioning Reports: In accordance with Section 01 91 00 reports supplemented as specified herein. Reports to include:
- .1 Record of point(s) of actual performance at maximum and minimum conditions and for single and parallel operation as finally set at completion of commissioning on pump curves.
 - .2 Report forms as specified Section 01 91 00: Report Forms and Schematics.
 - .3 Pump performance curves (family of curves).



**Designated Substances and Hazardous Materials Survey
Taxation Data Centre
1050 Notre Dame Ave., Sudbury, Ontario**

Prepared for:
Public Works and Government Services Canada (PWGSC)

DST File No.: BE-SD-009526
Final Report

November 18, 2008

DST Consulting Engineers Inc.
1351-E Kelly Lake Road, Unit 4, Sudbury, Ontario P3E 5P5
Tel.: (705) 523-6680 Fax: (705) 523-6690 E-mail: sudbury@dstgroup.com

November 18, 2008

Executive Summary

DST Consulting Engineers Inc. (DST) was retained by Public Works and Government Services Canada (PWGSC) to conduct a Designated Substances and Hazardous Materials Survey (DSHMS) of the Taxation Data Centre in Sudbury, Ontario. Specific consideration was taken for the upcoming renovation for the cafeteria/kitchen that is located on the second floor. This survey meets the building owner's legal obligations to maintain a record of asbestos containing materials, as required by Ontario Regulation (O.Reg.) 278/05 – *Designated Substance: Asbestos on Construction Projects and in Buildings and Repair Operations*, and the requirement to maintain a record of materials containing the 11 designated substances listed in the Occupational Health and Safety Act, as required by Section 30 of the, R.S.O. 1990, Chapter O.1.

DST performed the site visit of the Taxation Data Centre, Sudbury, Ontario, on October 20, 2008.

The Taxation Data Centre is a large structure that is approximately 35,778 m² in size with three floors and a penthouse. It was constructed in 1981 and has a total occupancy that is approximately 1,500 to 2,000 employees.

Materials suspected of containing designated substances or other hazardous materials were visually identified, based on the surveyor's knowledge of these building products. Visual identification of materials suspected to contain asbestos or lead, where not previously identified, was supported by the collection and analysis of a limited number of representative samples. Materials suspected of containing designated substances other than asbestos or lead (in paint) were identified by appearance, age, and knowledge of historic applications. The hazardous materials surveyed included polychlorinated biphenyl (PCB) containing equipment, ozone-depleting substances (ODSs), urea formaldehyde foam insulation (UFFI), fuel oil, and/or waste oil storage, chemical storage, radioactive materials and mould.

The findings and recommendations for the 2008 Taxation Data Centre DSHMS are as follows.

Asbestos

An evaluation of asbestos-containing materials (ACMs) was not included as part of the scope of work for the survey conducted by DST however a past asbestos survey report was provided by PWGSC for reference. In general, the past report identified non-friable ACMs in the building as 12"x12" vinyl floor tiles (light brown with dark brown & white streaks) as well as transite cement panels and piping.

A separate Annual Reassessment Survey report including an updated Annual Reassessment Record was completed by DST¹.

During the survey, DST identified suspected asbestos-containing vinyl tiles (12"x12" blue), which were sampled and analyzed for asbestos content. The laboratory analysis confirmed

¹ "Annual Reassessment Survey Information Taxation Data Centre, 1050 Notre dame ave., Sudbury, Ontario", DST Consulting Engineers Inc., November 18, 2008.

November 18, 2008

that the floor tiles did not contain regulated concentrations ($>0.5\%$) of asbestos. No ACMs were identified by DST in the planned kitchen renovation area.

Lead

Ten paint chip samples were collected for lead content analysis. The only sample with a lead concentration over 600 ppm. Was the grey paint applied to the east stair well hand rail (Sample LP-10) and was noted to be in good condition. All waste materials are not characterized as hazardous for disposal in accordance with O.Reg. 347, as amended.

Lead is suspected to be present as a normal constituent of lead glazing, the solder on the joints of copper piping as well as in the caulking associated with the cast iron drainage piping. Lead-acid batteries within emergency lights throughout the building should also be disposed of properly when no longer in use.

At the present time, no remedial action is required for lead containing materials.

Mercury

Mercury is present in one form (fluorescent light tubes) throughout the building.

No remedial action is required for these materials at the present time.

Silica

Silica is present in concrete building materials, mortar, hard plaster finishes and acoustic ceiling tiles throughout the building.

No remedial action is required for silica containing materials at the present time.

Polychlorinated Biphenyls (PCBs)

No suspected PCB-containing equipment was identified by DST on site.

Ozone Depleting Substances (ODSs)

According to maintenance staff, the type of refrigerant for cooling purposes within the Liebert AC unit, located in the computer room on Level 1, contains the refrigerant R-12, which is a known ODS. One of the two AC units has recently had the ODS-containing refrigerant replaced with an equivalent R-134a refrigerant which is a hydro-flouro carbon, a zero ozone depletion potential refrigerant. The refrigerant from the second unit will be replaced in the future. Other refrigeration equipment, such as the chillers located in the penthouse do not contain ODS-containing refrigerant as they were recently installed.

For the kitchen renovation area, refrigeration equipment was noted to contain R-134a refrigerant, a zero ozone depletion potential refrigerant. As well, according to the maintenance staff the refrigerant R-12, which is a known ODS, has been removed from the refrigeration equipment found throughout the building.

Other refrigeration equipment where service tags were unreadable may also contain ODSs. These service tags found throughout the building should be updated to include the model, serial number, refrigerant type and quantity, cooling capacity, and date stamp information. If and when these units are taken out of service, the ODS refrigerants must be captured and reclaimed by a licensed technician.

Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in building.

Fuel, Oil, and/or Waste Oil Storage

A total of two (2) Diesel Aboveground Storage Tanks (ASTs) are located at the Taxation Data Centre. Both tanks are in the fuel room that is located off the boiler room. There was minimal diesel staining on the floor around the tanks.

There was also imperial oil and industrial degreaser located in the "radioactive room" that is found on the 1st level near the garage.

Chemical Storage

A variety of chemicals are stored at the Taxation Data Centre. The majority of these chemicals are stored in the basement janitorial closet, the penthouse and the mechanical room. Each of the storage rooms had a MSDS binder and all of the chemicals were properly labelled as per the Workplace Hazardous Materials Information System (WHMIS).

Radioactive Materials

No radioactive materials were noted during the survey. There is a room on the 1st level that is called the "radioactive room" but it is solely used for storage of used batteries and miscellaneous fuel constituents.

Mould

No water damage and/or suspect mould growth noted in the building during the site survey.

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1.0 Introduction

DST was retained by PWGSC to conduct a designated substances and hazardous materials survey (DSHMS) of the Taxation Data Centre in Sudbury, Ontario. Specific consideration was taken for the upcoming renovation for the cafeteria/kitchen that is located on the second floor. This survey meets the building owner's legal obligations to maintain a record of asbestos containing materials (ACMs), as required by Ontario Regulation (O.Reg.) 278/05 – *Designated Substance: Asbestos on Construction Projects and in Buildings and Repair Operations*, and the requirement to maintain a record of materials containing the 11 designated substances listed in the *Occupational Health and Safety Act*, as required by Section 30 of the, R.S.O. 1990, Chapter O.1.

1.1. Site Description

The Taxation Centre is a large structure that is approximately 35,778 m² in size with three floors and a penthouse. It was constructed in 1981 and has a total occupancy of approximately 1500 to 2000 workers.

1.2. Scope of Work

DST's scope of work was developed in response to PWGSC's request for proposal and is as follows:

- Prepare a Health and Safety Plan;
- Review the previously-completed Asbestos survey report, however, should additional suspected asbestos-containing materials be identified, these will be evaluated after consultation with PWGSC;
- Conduct thorough room by-room and intrusive, but not destructively intrusive, survey for any additional ACMs and other designated substances for the Taxation Data Centre, including building construction materials and components, fixtures, and fixed equipment/furniture;
- Conduct intrusive investigation with emphasis of the planned renovation into ceiling and wall cavities that will be disturbed with the use of a boroscope instrument;
- Collect and analyze the required number of suspect ACM samples, if any additional suspected ACMs are identified to satisfy the requirements of O.Reg. 278/05;
- Collect and analyze paint chip samples of representative paint coatings of suspected lead-based paints in each building; and,
- Provide a summary of findings and recommendations for the building with specific consideration for the planned renovation.

2.0 Survey Methodology

2.1. Site Inspection and Sampling

Site inspection and sampling was conducted on October 20, 2008. DST conducted the designated substance and hazardous materials survey and sampling in accordance with general health and safety requirements, a project-specific health and safety plan, and quality assurance/quality control (QA/QC) protocols to ensure the collection of high quality data.

The assessment of ACMs relied upon the results of the previous-completed Asbestos Survey report, and may be used for future construction or renovation purposes. Where additional suspected ACMs were identified, they were evaluated after consultation with PWGSC. Additional ACMs may be present within concealed spaces, additional intrusive investigation, sampling and laboratory analysis of samples may be required.

The objective of the building surveys was to complete an inspection of the building exterior and of building interior components (e.g. mechanical systems, floors, ceilings and walls) within each room that was accessible using non-destructive techniques. However, intrusive investigations into ceiling and wall cavities for the planned kitchen renovation were performed with the use of a boroscope. Areas encountered within a building that were inaccessible at the time of the site visit were noted.

Where required, the inspection team was escorted by the Taxation Data Centre commissioners. Floor plans that indicated asbestos and paint bulk sampling locations are provided in Appendix 1, Laboratory Certificates of Analysis for both Asbestos and Lead are included in Appendix 2, Site Photographs are included in Appendix 3 and the Limitations of the Report is included in Appendix 4.

2.2. *Asbestos-Containing Materials*

The room by room visual inspection relied upon the results of a previously-completed Asbestos Survey report. When additional materials suspected of containing asbestos were found, they were evaluated after consultation with PWGSC. In Ontario, a material is defined as an ACM if the material has an asbestos content of 0.5%, by weight, or more.

The accessibility, approximate quantity, and condition of the material were noted for the additional ACM materials that were sampled. All the accessible areas of the renovated planned area of the building included areas above suspended ceilings, pipe chases, and access hatches when accessible. The use of a boroscope was used to investigate wall cavities to determine the potential of asbestos.

2.3. *Analytical Methodology*

Bulk samples of suspected asbestos-containing materials (ACMs) were collected by DST during the site investigation and submitted to International Asbestos Testing Laboratory (IATL) for analysis. According to O.Reg. 278/05 it is not necessary to analyze multiple bulk material samples collected from the same area of homogeneous material if analysis establishes that a bulk material sample contains 0.5% or more asbestos by dry weight. The bulk samples were analyzed using a combination of dispersion staining and polarized light microscopy (PLM) at IATL.

Gravimetric analysis combined with Transmission Electron Microscopy (TEM) was used for materials where the ACM fibres are tightly bound in the matrices (e.g. vinyl tiles). The analysis protocol requested by PWGSC required that if two samples of vinyl tiles analyzed by PLM resulted in no asbestos detected, then the third sample be tested using TEM.

2.3.1 Lead

Lead can be found as a normal constituent of the following materials and products found in the building: paints, ceramic tile glazing, solder on copper pipes, caulking in drainpipes and lead-acid batteries found within emergency light batteries.

Representative paint finishes were sampled and submitted to IATL for lead content analysis. Although the MOL has published a guideline for control of lead exposures on construction projects, it does not include a criterion for the classification of lead-paint. Instead, it uses presumed airborne lead concentrations as criteria for classifying work. However, in regulations set by the U.S. Department of Housing and Urban Development, Lead-Based Paint is classified as any paint application containing at least 1.0 milligrams of lead per square centimetre of surface area (1.0 mg/cm^2), or at least 0.5% lead content by weight (5,000 ppm). This criterion was widely, although not universally, used in Canada. In Canada, the Federal Hazardous Product Act has recently lowered the allowable concentration of lead in paints for new consumer products to 0.06% lead content by weight (600 ppm). For the purposes of this survey paints having a lead content greater than 0.06% are considered to be lead-based.

2.3.2 Classification System

The conditions of painted surfaces were evaluated based on the following definitions:

- Poor: Significant cracking and/or peeling;
- Fair: Some minor cracking and/or peeling; and,
- Good: No peeling of painted surfaces.

2.3.3 Paint Sampling

Chisels and paint scrapers were used to collect bulk samples of paint. Paint was scraped directly off the surface into sample bags which were then sealed and labelled. Care was taken to avoid removing the substrate along with the paint.

2.4. Mercury

Mercury is a transitional metal that is liquid at room temperature. Numerous reports have cited mercury as being highly toxic, in particular to children and the fetus. Mercury can be found in the following equipment often found as part of mechanical systems in the building: thermometers, pressure gauges, and electrical switches. Fluorescent light tubes contain mercury vapour equivalent to a single droplet of liquid mercury. There are no regulations that specifically govern the disturbance of mercury on construction projects. However, the OHS Branch of the MoL has published *The Safe Handling of Mercury: A Guide for the Construction Industry*. This document provides advice on how to reduce the risk of mercury exposure and outlines clean-up methods for spills. During the survey materials containing mercury or suspected of containing mercury were noted. No sampling of these materials for mercury was performed.

The OEL for airborne mercury is prescribed by Ontario Regulation 844, *Designated Substance – Mercury*, as amended. Work procedures and personal protective equipment must be used to ensure that workers are not exposed to airborne mercury levels that exceed this OEL. Liquid mercury is classified as a hazardous waste under O.Reg. 347, as amended. The transport of the waste to a disposal site is controlled by O.Reg. 347 and by the federal TDGA. It

is now common practice to recycle fluorescent light tubes, and other items containing mercury vapour or liquid mercury, recovering the component materials, and avoiding the generation of hazardous waste.

2.5. Silica

Silica is an abundant mineral that occurs naturally in sand and rock containing quartz. Silica is therefore a normal constituent present in many building materials, including concrete, terrazzo, hard plaster finishes, ceramic tiles and brick & mortar. No sampling of these materials for silica was performed.

There are no regulations that specifically govern the disturbance of silica on construction projects. However, the OHS Branch of the MoL has published the document *Guideline: Silica on Construction Projects*. This document classifies the disturbance of materials containing silica as either Type 1, Type 2 or Type 3 work, and assigns different levels of respiratory protection and work procedures for each classification. The OEL for airborne silica is prescribed by Ontario Regulation 845, *Designated Substance – Silica*, as amended. Work procedures and personal protective equipment must be used to ensure that workers are not exposed to airborne silica levels that exceed this OEL.

2.6. Benzene

Benzene may be a constituent of fuels and paint thinners both of which were found in containers and/or storage closets of the building.

There are no regulations that specifically govern the disturbance of benzene on construction projects. Industrial processes involving benzene are regulated under the Ontario Regulation 839 *Designated Substance – Benzene*, as amended. The transport of the waste to the disposal site is controlled by the federal TDGA.

Storage tanks at the facility may have various regulatory requirements associated with tank use, maintenance, and decommissioning, such as under the *Ontario Environmental Protection Act* or *Technical Standards and Safety Act*. A tank assessment is outside of the scope of the current project.

2.7. Other Designated Substances

The following Designated Substances are not expected to be present in any buildings at the Institution in forms or quantities that would cause current concern:

- Acrylonitrile;
- Arsenic;
- Coke Oven Emissions;
- Ethylene Oxide;
- Isocyanates; and,
- Vinyl Chloride.

2.8. Polychlorinated Biphenyls (PCBs)

Polychlorinated Biphenyls, commonly known as Chlorobiphenyls or PCBs, are industrial chemicals which were synthesized and commercialized in North America starting in 1929. PCB oils were used in the manufacturing of fluorescent light ballasts, electrical equipment, heat exchangers, hydraulic systems, and several other specialized applications up to the late 1970s. They were never manufactured in Canada but were nevertheless widely used.

The handling, transport and disposal of PCBs are regulated under the Ontario Environmental Protection Act (EPA), R.R.O. 1990, *Regulation 362, Waste Management – PCBs, as amended*. According to the EPA, materials are deemed to contain PCBs if their concentration exceeds 50 ppm. or 50 mg/kg. PCB waste is defined as any liquid, solid or equipment that has been taken out of service for the purpose of disposal, and that contains PCB materials. The transport of PCB waste to the disposal site is controlled by the federal Transportation of Dangerous Goods Act, 1992.

Ten percent (10%) of the light ballasts were inspected where readily accessible. The majority of the ballasts were charged and in use at the time of the site inspections, and could not be safely accessed for inspection.

For all suspect PCB containing equipment, the following information was collected: model, serial number, and date stamp information (where readily visible).

2.9. Ozone-Depleting Substances (ODSs)

Ozone depleting substances (ODSs) refer to a variety of chlorofluorocarbon (CFC) and bromine (halons) gases which caused, when released, a reduction of ozone in the stratosphere. International concerns with projected decreases in ozone have led to the adoption of the Montreal Protocol in 1987 banning the use of ozone depleting substances. Since 1989, the use of CFCs and halons has decreased dramatically in Canada.

Symptoms for exposure to ODS will vary depending on the type of compounds. Hazardous effects of ODS are mostly associated with the depletion of the ozone layer. Reductions in ozone levels will lead to higher levels of ultra violet light reaching the Earth's surface. This may cause cataracts, dermatitis and skin cancer.

The handling, transport and disposal of ODS are regulated under the Ontario Environmental Protection Act (EPA), R.R.O. 1990, *Regulation 356 as amended to O.Reg. 851/93, Ozone Depleting Substances – General*. Disposal of ODS waste is controlled by the Ontario Environmental Protection Act, R.R.O., 1990, *Regulation 347 as amended by O.Reg. 461/05, General – Waste Management*. The transport of the waste to the disposal site is controlled by the federal Transportation of Dangerous Goods Act, 1992.

Equipment containing ODSs was visually inspected. For all ODS containing equipment, the following information was collected: model, serial number, refrigerant type and quantity, cooling capacity, and date stamp information, when accessible and where it was readily readable. Equipment was not disassembled to view concealed information.

2.10. Urea Formaldehyde Foam Insulation (UFFI)

Formaldehyde is a pungent, colourless gas commonly used in water solution as a preservative and disinfectant. It is also a basis for major plastics, including durable adhesives. It occurs naturally in the human body and in the outdoor environment. Formaldehyde is used to bond plywood, particleboard, carpets and fabrics, and it contributes to "that new car smell." Formaldehyde is also a by product of combustion; it is found in tobacco smoke, vehicle exhaust and the fumes from furnaces, fireplaces and wood stoves.

Urea-formaldehyde foam insulation (UFFI) was developed in Europe in the 1950s as an improved means of insulating difficult-to-reach cavities in house walls. It is typically made at a construction site from a mixture of urea-formaldehyde resin, a foaming agent and compressed air. When the mixture is injected into the wall, urea and formaldehyde unite and "cure" into an insulating foam plastic. UFFI was banned in Canada in 1980.

2.11. Fuel, Oil, and/or Waste Oil Storage

The locations of stored fuel oil and waste oil were recorded along with a general description of the types of materials and rough estimate of quantities of materials stored. This was not a detailed inventory of each container.

2.12. Chemical Storage

The location of fuel chemical storage rooms and cabinets were recorded along with a general description of the types of materials and rough estimate of quantities of materials stored. This was not a detailed inventory of each container. Only materials labelled as being hazardous or suspected to be hazardous were included in the survey.

2.13. Radioactive Materials

No radioactive materials were identified at the Taxation Data Centre.

2.14. Mould

The term "mould" applies to a large group of micro-organisms, which together, with mushrooms and yeast, form the Fungi Kingdom of living matter. Mould organisms grow by degrading nutrients from organic substrates such as wood and wood products, fabrics, foodstuff, plant and soil. The growth of mould necessitates three essential conditions; a suitable temperature, an appropriate substrate and adequate moisture.²

Public health and regulatory agencies acknowledge mould growth in general use buildings to be a risk factor for adverse health effects in occupants. Occupants may experience allergic responses such as asthma, headache, respiratory tract irritation, eye irritation, skin irritation, and sinus congestion. More severe health effects are rare and typically limited to individuals with suppressed immune systems, children, elderly people and persons with high occupational exposure.

² Canadian Construction Association, CCA-82 "Mould Guidelines for the Canadian Construction Industry", 2004

Currently, there are no regulations pertaining to mould on construction projects. Most jurisdictions have issued alerts or bulletins concerning the hazard of mould in indoor environments. The Canadian Construction Association (CCA) published the following document as a response to concerns in the construction industry; CCA-82, "Mould Guidelines for the Canadian Construction Industry", 2004.

3.0 Taxation Data Centre

3.1. Survey Findings

The Taxation Data Centre was surveyed on October 20, 2008. Results of the DSHMS are presented in the subsections of Section 3.2 and 4.2. Recommendations for measures and construction and removal procedures for the identified designated substances and hazardous materials in this building are presented in Section 3 and 4.

A separate Annual Reassessment Survey report including an updated Annual Reassessment Record was completed by DST.

3.1.1 Asbestos – Additional Sampling

Three (3) samples of suspected ACMs were gathered and submitted for analysis. The results are presented in Table 1. The sample identification numbers, room number (where sampled and/or observed), description of material, friability, condition, accessibility, recommended action, and asbestos content are also included, where applicable, in this table. Approximate sampling locations are shown on the floor plans provided in Appendix 1.

No other additional suspected ACM material was identified at the time of the survey. The Vinyl floor tiles (Samples ASB-01 A, B and C) did not contain regulated concentrations of asbestos.

Table 1. Summary of Additional Suspected ACMs

Sample ID	Room #	Material	Friable ¹	Condition ²	Accessibility ³	Action ⁴	Asbestos Content
ASB-01A to ASB-01C	Office space/mail room	Vinyl floor tiles	N	Good	A	No action required	ND - PLM 0.25% O - TEM

Notes:

- 1 Friability is assessed as friable or non-friable
- 2 Condition is rated as good, fair, or poor
- 3 Accessibility is A, B, C (exposed), C (concealed), or D as defined in PWGSC DP 057.
- 4 Action is 1, 2, 3, 4, 5, 6, or 7 as defined in PWGSC DP 057.
- 5 Asbestos Content is Chrysotile (C), Amosite (A) or other Fiber (O) expressed as a percentage
- ND None Detected (for PLM <0.5%; TEM <0.1%)

Based on the sampling results, the vinyl floor tiles do not contain regulated concentrations of asbestos.

3.1.2 Lead

Ten (10) samples of typical paint finishes were collected from painted interior surfaces of the subject building and were analysed for lead content. The analytical results are provided in Appendix 2 and are summarized in Table 2. The sample identification numbers, room number (where sampled and/or observed), description of material, condition, lead content and estimated quantity (for paints containing greater than 600 ppm) are also included in this table. Approximate sampling locations of paint samples collected are shown on the floor plans provided in Appendix 1.

Table 2. Summary of Lead Paint Survey

Sample ID	Sample Area	Colour, Location & Description	Condition ¹	Lead Content (ppm)	Estimated Quantity (m ²)
LP-01	1 st level - Service lobby	Grey floor paint	Fair	8.5	-
LP-02	1 st level - North hallway	Beige floor paint	Fair	8.1	-
LP-03	1 st level - North hallway	Beige wall paint	Good	8.6	-
LP-04	2 nd level - Wall column	White column paint	Fair	5.3	-
LP-05	2 nd level - Janitor room	Blue/red floor paint	Poor	7	-
LP-06	2 nd level - Janitor room	Brown door paint	Poor	9.3	10
LP-07	3 rd level - West hallway	Blue wall paint	Good	8.3	-
LP-08	3 rd level - East hallway	Green wall paint	Good	6.2	-
LP-09	3 rd level - Hallway	Pink door paint	Good	8.8	-
LP-10	3 rd level - Stairwell	Brown railing paint	Good	1,000	-

Notes: ¹ Condition is rated as good, fair or poor.

Bold Exceeds the Surface Coating Materials Regulations limit of 0.06% by weight (mg/kg), or 600 ppm.

There was not any other suspect lead-containing paint located in the mechanical room at the time of the survey.

Based on the age of the subject building (1979 - 1981), lead may also be present in ceramic tile glazing, emergency light batteries, solder on copper pipes and cast iron drain pipe caulking.

3.1.3 Mercury

Mercury may be found in fluorescent lamp tubes found throughout the building.

3.1.4 Silica

Silica is expected to be present as a normal constituent in concrete building materials, plasters, ceramic tiles and brick & mortar that are found throughout the building.

3.1.5 Benzene

Benzene may be a constituent in the fuel associated with the ASTs located in the fuel room and the fuel associated with the industrial degreaser and the Imperial oil in the "radioactive room".

3.1.6 Other Designated Substances

Other designated substances were not identified in the building.

3.1.7 Polychlorinated Biphenyls (PCBs)

A representative of the maintenance staff indicated that "the original ballasts have been all removed in the late 80's to eliminate the use of these (PCB-containing) ballasts". Formal documentation confirming this could not be provided by the maintenance staff. However, in 1999 the Sudbury Taxation Data Centre became a member of EarthCare Sudbury. As part of the infrastructure improvements the ballasts were replaced with electronic ballasts for energy reduction purposes. As such, there was not any suspected PCB-containing equipment identified in this building.

3.1.8 Ozone-Depleting Substances (ODSs)

Some of the service labels were not readable at the time of the survey. These labels should be updated to include the type of refrigerant used to determine if they are ODSs. At this time however, according to maintenance staff, the type of refrigerant for cooling purposes within the Liebert AC unit, located in the computer room on Level 1, contains the refrigerant R-12, which is a known ODS. One of the two AC units has recently had the ODS-containing refrigerant replaced with an equivalent R-134a refrigerant which is a hydro-fluoro carbon, a zero ozone depletion potential refrigerant. The refrigerant of the second unit will be replaced in the future. Other refrigeration equipment, such as the chillers located in the penthouse do not contain ODS-containing refrigerant as they were recently installed.

For the kitchen renovation area, refrigeration equipment was noted to contain R-134a refrigerant, a zero ozone depletion potential refrigerant. As well, according to the maintenance staff the refrigerant R-12, which is a known ODS, has been removed from the refrigeration equipment found throughout the building.

3.1.9 Urea Formaldehyde Foam Insulation (UFFI)

No evidence of UFFI was observed.

3.1.10 Fuel, Oil, and/or Waste Oil Storage

A total of two (2) Diesel ASTs are located in the fuel room that is located off the boiler room. There was also imperial oil and industrial degreaser located in the "radioactive room" that is found on the 1st level near the garage.

3.1.11 Chemical Storage

There are a number of chemical storages that were noted. This includes the basement janitorial closet, the penthouse and the mechanical room. There were number of materials labelled as being hazardous noted during the survey.

3.1.12 Radioactive Materials

No radioactive materials were identified at the Taxation Data Centre. There is a room on the 1st level that is called the "radioactive room" but it is solely used for storage of used batteries and miscellaneous fuel constituents.

3.1.13 Mould

No mould impacted building materials were noted.

4.0 Planned Kitchen Renovation Area

4.1. Survey Findings

The planned renovated area was surveyed on October 20, 2008. Specific consideration was considered for this part of the Taxation Data Centre.

4.1.1 Asbestos

No other additional suspected ACM material was identified in the planned renovated area at the time of the survey. In general, based on the past report³, there are asbestos containing floor tiles in the "tuck shop" or in the "dark room". The condition of both sets of floor tiles was good at the time of the survey.

The ceiling hatch was opened and the decking was investigated. The use of the boroscope for wall cavity investigation was not possible, as the walls that will be a part of the renovation plan are constructed of concrete block.

4.1.2 Lead

No paint samples were collected in this area since none were suspected to be lead containing. Based on the age of the subject building (1979 - 1981), lead may be present in ceramic tile glazing, and solder on copper pipes in this area.

4.1.3 Mercury

Mercury may be found in fluorescent lamp tubes found throughout the kitchen area.

4.1.4 Silica

Silica is expected to be present as a normal constituent in concrete building materials, plasters and the ceramic tiles.

The walls of the planned renovation area are constructed of concrete block with a layer of plaster and ceramic tiles over top.

4.1.5 Other Designated Substances

Other designated substances were not identified in this area of the building.

4.1.6 Polychlorinated Biphenyls (PCBs)

No suspected PCB-containing equipment was identified in this area of the building.

³"Asbestos Survey, Decommissioning Consulting Services Limited, Feb 2007"

4.1.7 Ozone Depleting Substances (ODSs)

Several service labels were not decipherable at the time of the survey. However, based on the maintenance staff, R-12 refrigerant; a known ODS, has been removed from the refrigeration equipment.

4.1.8 Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in this area of the building.

4.1.9 Fuel, Oil, and/or Waste Oil Storage

No fuel, oil and/or waste oil storage was identified in this area of the building.

4.1.10 Chemical Storage

There were a number of materials labelled as being hazardous noted in this area of the building.

4.1.11 Radioactive Material

No radioactive material was identified in this area of the building.

4.1.12 Mould

No mould was identified in this area of the building at the time of the survey.

5.0 Summary and Recommendations

A summary of the findings of the Taxation Data Centre DSHMS are as follows.

Asbestos

An evaluation of ACMs was not included as part of the scope of work for the survey conducted by DST; however, a past Asbestos Survey report was provided by PWGSC for reference. In general, the past report identified the following non-friable ACMs in the planned renovated area of the building: 12"x12" vinyl floor tiles (light brown with dark brown & white streaks). No other additional suspect asbestos-containing materials were identified in this area of the Taxation Data Centre.

The 12"x12" floor tiles that were identified in the "tuck room" and in the "dark room" that are included of the planned renovation work. These should be removed using Type 1 procedures provided where the material is wetted prior to removal, and the work is done without the use of power tools.

A separate Annual Reassessment Survey report including an updated Annual Reassessment Record was completed by DST for November 2008. A copy is provided under a separate cover.

The following recommendations apply to all observed ACMs and suspected ACMs:

- Materials must be maintained in good condition.

November 18, 2008

- Appropriate work procedures and precautionary measures must be used, as outlined in O.Reg. 278/05, when performing work that may disturb ACMs or suspected ACMs.
- The condition of material(s) identified in this report must be inspected at least annually, and this record must be updated accordingly.
- If ACMs or suspected ACMs become damaged and occupant or worker exposure to the material is likely to occur, the damaged material must be repaired or removed following work procedures outlined in O.Reg. 278/05.

Lead

One paint application sampled exceeded 600 ppm. of lead (Sample LP-10), however, this sample was noted to be in good condition.

Lead is suspected to be present as a normal constituent of lead glazing, the solder on the joints of copper piping as well as in the caulking associated with the cast iron drainage piping. The lead glazing and the solder on copper piping are two materials that are found in the planned renovation area.

Lead-acid batteries within emergency lights throughout the building should also be disposed of properly when no longer in use.

To remove solid lead materials associated with the pipes, the pipes can be cut a small distance (e.g. 50 mm) from the joints or caulking to avoid direct disturbance of the lead solder or caulking.

The disposal of construction waste containing lead is governed by *O.Reg. 347/90 - General - Waste Management*, as amended. The classification of the waste is dependent upon the results of leachate tests. The transport of the waste to the disposal site is controlled by the federal Transportation of Dangerous Goods Act, 1992.

At the present time, no remedial action is required for lead-containing materials and equipment.

Mercury

Mercury is present in one form (i.e. fluorescent light tubes) throughout the building with the exception of the planned renovation area.

When removal of the fluorescent light tubes is required, the tubes should be removed intact from the fixtures. This prevents worker exposure to mercury vapour, particularly if the tubes were energized shortly before removal. Devices and equipment containing liquid mercury should also be handled accordingly to prevent the spill of mercury.

Mercury is classified as a hazardous waste under *O.Reg. 347/90 - General - Waste Management*, as amended. The transport of the waste to the disposal site is controlled by the federal Transportation of Dangerous Goods Act, 1992. It is now common practice to recycle fluorescent light tubes, recovering the component materials, and avoiding the generation of hazardous waste.

No remedial action is required for the mercury containing equipment at the present time.

Silica

Silica is present in concrete products, mortar, hard plaster finishes, ceramic tiles and acoustic ceiling tiles throughout the buildings. Concrete products, plaster and ceramic tiles are found within the planned renovated area.

Dust control procedures, which are typical of any well executed renovation or demolition project, are usually sufficient to control airborne silica levels. As a general rule, it is preferable to use more stringent dust suppression techniques and engineering controls as opposed to relying on respiratory protection to control worker exposure. Respiratory protection should only be relied on as a last resort when dust suppression techniques and engineering controls fail to control worker exposure to silica.

At the present time, no remedial action is required for silica-containing building materials.

Polychlorinated Biphenyls (PCBs)

A representative of the maintenance staff indicated that "the original ballasts have been all removed in the late 80's to eliminate the use of these (PCB-containing) ballasts". Formal documentation confirming this could not be provided by the maintenance staff. However, in 1999 the Sudbury Taxation Data Centre became a member of EarthCare Sudbury. As part of the infrastructure improvements the ballasts were replaced with electronic ballasts for energy reduction purposes. Ballasts installed in light fixtures installed with documentation in the building between 1994 and 2004 are not suspected to contain PCBs.

If any ballasts present in light fixtures installed previous to 1980 should be considered PCB-containing. If no longer in use this ballast should be appropriately handled and disposed of. When the fluorescent light fixtures are eventually taken out of service, the ballasts should be examined to determine their PCB content. This can be done by comparing the ballast codes to information contained in *Identification of Lamp Ballasts Containing PCBs*, published by Environment Canada. Ballasts that contain PCBs must be packaged, transported and disposed of in accordance with all appropriate provincial and federal regulations.

Three (3) gas valves that are located in the boiler room are suspected to contain PCBs. These gas valves appear to be from the original installation in the 1980's as per the maintenance staff. It is expected that the PCB content of the fluid in these units does not exceed 50 ppm.

Ozone Depleting Substances (ODSs)

Refrigeration equipment located in the planned renovation area was noted to contain R-134a refrigerant that is a hydro-flouro carbon, a zero ozone depletion potential refrigerant. This type of refrigerant was located within the water cooler condenser in the kitchen area of the planned renovation area. According to the maintenance staff the refrigerant R-12, which is a known ODS, have been removed from the refrigeration equipment.

Other refrigeration equipment present in the building may also contain ODSs where service tags were unreadable to obtain the type of refrigerant used. These service tags should be updated

to include the model, serial number, refrigerant type and quantity, cooling capacity, and date stamp information. If and when these units are taken out of service, the ODS refrigerants must be captured and reclaimed by a licensed technician.

Urea Formaldehyde Foam Insulation (UFFI)

No UFFI was identified in building.

Fuel, Oil, and/or Waste Oil Storage

A total of two (2) Diesel ASTs are located at the Taxation Data Centre. Both tanks are in the fuel room that is located off the boiler room. There was minimal diesel staining on the floor around the tanks.

There was imperial oil and industrial degreaser located in the "radioactive room" that is found on the 1st level near the garage.

Chemical Storage

A variety of chemicals are stored at the Taxation Data Centre. The majority of these chemicals are stored in the basement janitorial closet, the penthouse and the mechanical room. The storage rooms had a MSDS binder and all chemicals were properly labelled as per the Workplace Hazardous Materials Information System (WHMIS).

Radioactive Materials

No radioactive materials were noted during the survey.

Mould

There was not any water damage and/or suspect mould growth noted in the building during the site survey.

November 18, 2008

6.0 Closure

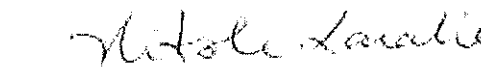
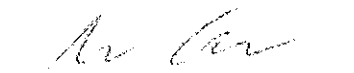
A Limitations of Report section, which forms an integral part of this report, is attached as Appendix 4.

We trust the information herein meets your requirements. Should you have any questions, please do not hesitate to contact the undersigned.

For DST Consulting Engineers Inc.



Manon Giroux, A.Sc.T, Associate
Building Environmental Head, Sudbury
Project Manager


for Brendan Harrigan, P.Eng.
Associate, Sector Manager
Shannon Andrews, B.sc.,
Environmental Technologist

APPENDIX 1

Sample Location Plans

APPENDIX 2

Certificate of Analysis Asbestos & Lead

CERTIFICATE OF ANALYSIS

Client: DST Consulting Engineers Inc.

1351 E Kelly Lake Rd; Unit 4

Sudbury ON P3H 5P5

Report Date: 11/17/2008

Project:

Project No.: BE-SD-009526

BULK SAMPLE ANALYSIS SUMMARY

Lab No.:	3455426	Description / Location:	Grey Floor Tile		
Client No.:	ASB-01A				
% Asbestos	Type	% Non-Asbestos Fibrous Material	Type	% Non-Fibrous Material	
None Detected	None Detected	None Detected	None Detected	100	

Lab No.:	3455426	Description / Location:	Black Mastic		
Client No.:	ASB-01A				
% Asbestos	Type	% Non-Asbestos Fibrous Material	Type	% Non-Fibrous Material	
None Detected	None Detected	None Detected	None Detected	100	

Lab No.:	3455427	Description / Location:	Grey Floor Tile		
Client No.:	ASB-01B				
% Asbestos	Type	% Non-Asbestos Fibrous Material	Type	% Non-Fibrous Material	
None Detected	None Detected	None Detected	None Detected	100	

Lab No.:	3455427	Description / Location:	Black Mastic		
Client No.:	ASB-01B				
% Asbestos	Type	% Non-Asbestos Fibrous Material	Type	% Non-Fibrous Material	
None Detected	None Detected	None Detected	None Detected	100	

NIST-NVLAP No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those test(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government.
This report shall not be reproduced except in full without written approval of the laboratory.*

Analysis Method: EPA 600/R-93/116

Comments: (PC) Indicates Simplified Point Count Method performed. Method not performed unless stated. Quantification at <0.25% by volume is possible with this method. (PC-Trace) represents this limit of quantitation. (PC-Trace) means that asbestos was detected but is not quantifiable under the Point Counting regimen. Analysis includes all distinct, separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed. Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, negative PLM results cannot be guaranteed. Electron Microscopy can be used as a confirming technique. Regulatory Limit is based upon the sample matrix.

Analysis Performed By: M. Mirza

Approved By:

Date: 11/5/2008

Page 1 of 2

Frank R. Blumfeld, III
Laboratory Director



International Asbestos
Testing Laboratories

9000 Commerce Parkway Suite B Mt. Laurel, NJ 08054
Telephone: 856-231-9449 Fax: 856-231-9818

CERTIFICATE OF ANALYSIS

Client: DST Consulting Engineers Inc.

1351 E Kelly Lake Rd; Unit 4

Sudbury ON P3E 5P5

Report Date: 11/17/2008

Project:

Project No.: BE-SD-009526

BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 3455428

Client No.: ASB-01C

Description / Location: Gray Floor Tile

% Asbestos

Type

% Non-Asbestos Fibrous Material

Type

% Non-Fibrous Material

None Detected

None Detected

None Detected

None Detected

100

Amended report.

Lab No.: 3455428

Client No.: ASB-01C

Description / Location: Black Mastic

Layer No.: 2

% Asbestos

Type

% Non-Asbestos Fibrous Material

Type

% Non-Fibrous Material

None Detected

None Detected

None Detected

None Detected

100

Amended report.

NIST-NVLA# No. 101165-0

NY-DOH No. 11021

AIHA Lab No. 100188

*This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLA, AIHA or any agency of the U.S. government
This report shall not be reproduced except in full, without written approval of the Laboratory*

Analysis Method: EPA 600/4-93/116

Comments: (PC) Indicates Modified Point Count Method performed. Method not performed unless noted. Quantification at <0.15% by volume is possible with this method. (PC-Trace) represents this limit of quantitation. (PC-Trace) means that asbestos was detected but is not quantifiable under the Point Counting regimen. Analysis includes all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed. Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, negative PLM results cannot be guaranteed. Electron Microscopy can be used as a confirming technique. Regulatory Limit is based upon the sample matrix.

Analysis Performed By: M. Mirza

Date: 11/5/2008

CERTIFICATE OF ANALYSIS

Client: DST Consulting Engineers Inc.
1351 E Kelly Lake Rd, Unit 4
Sudbury ON P3E 3P5

Report Date: 11/17/2008
Project:
Project No.: BE-SD-009526

TEM BULK SAMPLE ANALYSIS SUMMARY

IATL No.: 083455426

Description / Location: Black Mastic

Client No.: ASB-01A

Gravimetrically Reduced Subsample: 3.2%

Percent Asbestos Detected: Trace Tremolite
Detected at < 0.25%

Percent Non-Asbestos Fibrous Material: ND None Detected

Percent Non-Fibrous Material: 100% Particulate:
SiMg,Ti,Ca

Comments: Amended report.

NIST-NVLAP No. 101165-0

AIHA Lab No. 100188

NYS-DOH No. 11021

Methodology: Transmission Electron Microscopy (TEM) In Accordance With:
EPA 1984 Method For Identifying And Quantifying Asbestos In Non-Friable Organically Bound Bulk Samples, Revised 11/1/2005.
EPA-600/R-97/116 Section 2.5 "Asbestos In Bulk Building Materials By TEM Gravimetry."

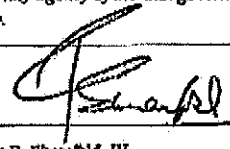
*IATL assumes that all sampling methods and data upon which these results are based have been accurately supplied by the client.
This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA or any agency of the U.S. government.
Results are verifiable for only those operations and analyses performed in this laboratory.*

Analysis Performed By: C. Liska

Approved By:

Date: 11/6/2008

Page 1 of 1


Frank R. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

Client: DST Consulting Engineers Inc.
1351 E Kelly Lake Rd, Unit 4
Sudbury ON R3E 5P5

Report Date: 11/17/2008
Report Number: 11083734
Project: Oct 31, 2008
Project No.: BE-SID-009526

LEAD PAINT SAMPLE ANALYSIS SUMMARY

Lab No.	Client No.	Location / Description	Concentration Lead By Weight (%)
3455416	LP-01	Grey Paint	<0.0085***
3455417	LP-02	Yellow/Grey Paint	<0.0081
3455418	LP-03	Tan Paint	<0.0086
3455419	LP-04	White Paint	<0.0053
3455420	LP-05	Dk Grey Paint	0.0070
3455421	LP-06	Peach Paint	<0.0093
3455422	LP-07	Blue Paint	<0.0083***
3455423	LP-08	LA Green Paint	<0.0062***
3455424	LP-09	Mauve Paint	<0.0088
3455425	LP-10	Lt Grey Paint	1.0

NATIONAL LEAD LABORATORY ACCREDITATION PROGRAM (NLLAP)

AIHA No. 100188 / NYSDOH-BLAP No. 11021

Analysis Methods: ASTM D3335-83A "Standard Method To Test For Low Concentrations Of Lead In Paint By Atomic Absorption Spectrophotometry"
EPA SW846-(7420/7421) "Standard Method To Test For Low Concentrations Of Lead In Soils, Sludges and Sediments By AAS"

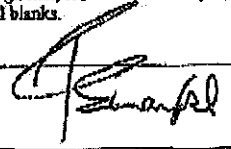
Comments: Regulatory limit is 0.5% lead by weight (EPA/IRUD guidelines). Recommend multiple sampling for all samples less than regulatory limit for confirmation. All results are based on the samples as received at the lab. IATL assumes that appropriate sampling methods have been used and the data upon which these results are based have been accurately supplied by the client. Method Detection Limit (MDL) per EPA Method 40 CFR Part 136 Appendix B: Reporting Limit (RL) based upon Lowest Standard Determined (LSD) in accordance with AIHA-BLLAP policies. LSD=0.2 ppm MDL=0.0024% by weight. RL= 0.010% by weight (based upon 100 mg sampled). * Insufficient sample provided to perform QC reanalysis (<200 mg) ** Not enough sample provided to analyze (<50 mg) *** Matrix / substrate interference possible. Sample results are not corrected for contamination by field or analytical blanks.

Date Received: 11/5/2008

Date Analyzed: 11/5/2008

Analyst: C. Shaffer

Approved By:


Frank E. Ehrenfeld, III
Laboratory Director

APPENDIX 3

Site Photographs

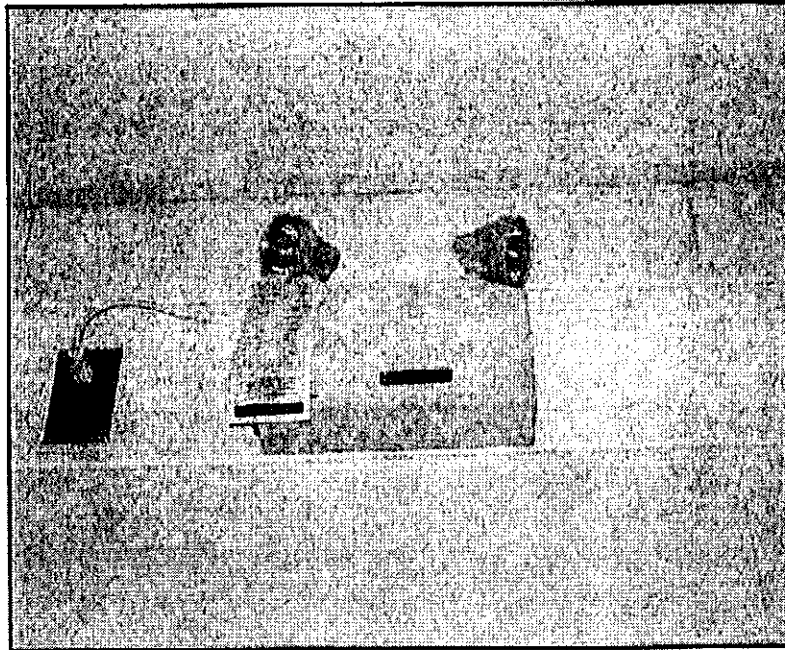


Photo 1: Emergency light batteries that may contain lead.

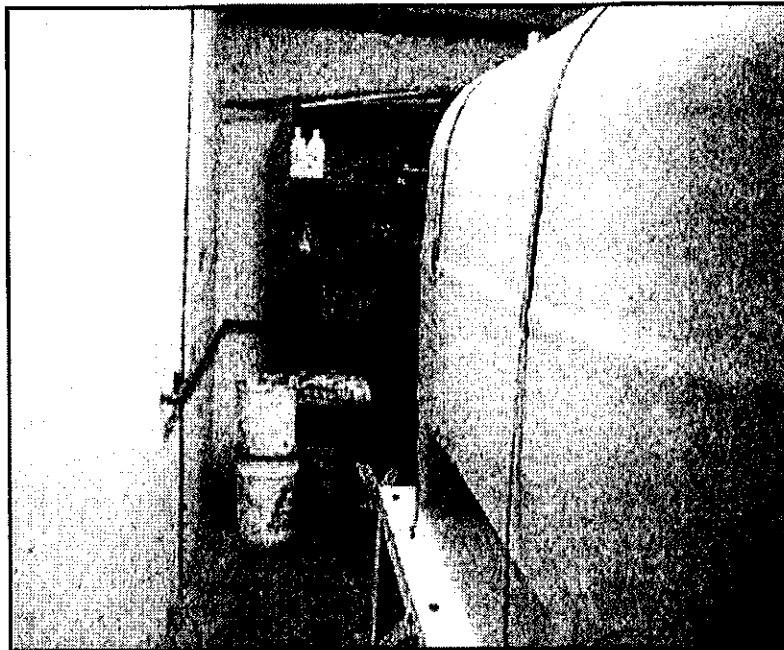
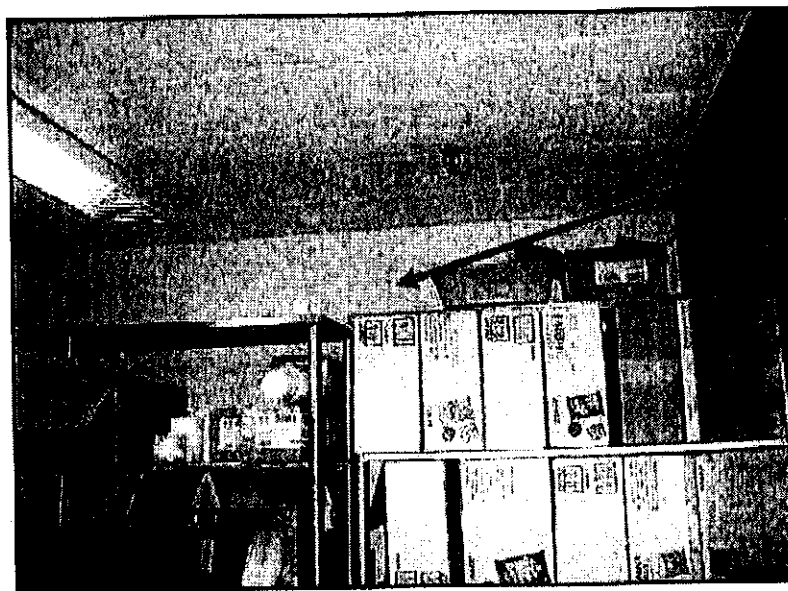


Photo 2: One of two ASTs located in the fuel room.



Photo 3: General area of the planned kitchen renovation area.



The wall materials are constructed with concrete block, plaster and ceramic tiles.

Photo 4: One wall that will be taken down during the planned renovation.

APPENDIX 4

Limitations of Report

LIMITATIONS OF REPORT

This report is intended for client use only. Any use of this document by a third party, or any reliance on or decisions made based on the findings described in this report, are the sole responsibility of such third parties, and DST Consulting Engineers Inc. accepts no responsibility for damages, suffered by any third party as a result of decisions made or actions conducted based on this report. No other warranties are implied or expressed.

The data, conclusions and recommendations which are presented in this report, and the quality thereof, are based on a scope of work authorized by the client. The sampling program includes the removal of building finishes in select representative areas for laboratory analysis. There is a practical limitation on the number of intrusive test cuts that can be made. This requires the investigator to extrapolate observations and analytical results between test cut locations. The uncertainty, and inherent risk, associated with this necessity increases with the distance between sampling locations. Note; however, that no scope of work, no matter how exhaustive, is guaranteed to identify all contaminants. This report cannot warranty that all building conditions are represented by those identified at specific locations. The sampling of materials such as boiler refractory linings, roofing materials, window caulking and drain pipe joint caulking that have the potential to contain asbestos was not performed to maintain integrity of systems.

Recommendations, when included, are made in good faith and are based on several successful experiences. If either the condition of the building or the health of the occupants changes in the future with respect to potential indoor air quality issues, the case should be reviewed and appropriate measures taken. DST is not in a position to evaluate the health risks associated with exposure to mould and/or mites referenced in this report. Since human reactions to mould exposure vary widely amongst individuals, and specific segments of the population are generally recognized to be more susceptible than others, an evaluation of health risks can only be made on an individual basis and even then, only by a licensed medical practitioner equipped with knowledge of the individual's medical history.

Any use of this report by the client and any other party is contingent upon their understanding and acceptance of the following condition:

"Mould is a naturally occurring substance and regardless of the results of an assessment or how completely it is removed, it could reoccur."

Regardless of the effectiveness of any remedial actions, mould growth may occur/reoccur anywhere within a building at any time, should conditions be favorable. It is essential to maintain buildings, surfaces, appliances and furnishings under conditions which are not favorable to mould incubation and growth (warm, dry, and clean). The scope of services provided by DST for this assignment did not include a detailed evaluation of the thermal and moisture management characteristics of the exterior wall assembly, or a detailed building envelope investigation to ascertain every potential root cause of the water infiltration that created an environment favorable to mould proliferation. Similarly, DST has not been engaged to provide detailed designs for the reinstatement of building finishes or for improvements to the building envelope.

Note also that standards, guidelines and practices related to mould investigations may change with time. Those which were applied at the time of this investigation may be obsolete or unacceptable at a later date.

Any comments given in this report on potential remediation problems and possible methods are intended only for the guidance of the designer. The scope of work may not be sufficient to determine all of the factors that may affect construction, clean-up methods and/or costs. Contractors bidding on this project or undertaking clean-ups should, therefore, make their own interpretation of the factual information presented and draw their own conclusions as to how the conditions may affect their work.

Any results/information from analytical laboratories, other consultants or other subcontractors reported herein has been carried out by others, and DST Consulting Engineers Inc. cannot warranty their accuracy. Similarly, DST cannot warranty the accuracy of information supplied by the client.

Public Works and Government Services Canada
4900 Yonge Street, 11th Floor
Toronto, Ontario M2N 6A6

February 22, 2008

Attention: Ms. Elizabeth Hayakawa

Subject: Asbestos Update Survey Report
Taxation Data Center, 1050 Notre Dame Avenue, Sudbury, Ontario

DST File No.: BE-OT-008142

1.0 Objectives

DST Consulting Engineers Inc. (DST) was retained by Public Works and Government Services Canada (PWGSC) to conduct an asbestos update survey of the Taxation Data Center which is located at 1050 Notre Dame Avenue, in Sudbury, Ontario.

This asbestos update survey was conducted in order to satisfy the requirements of Ontario Regulation (O.Reg.) 278/05 *Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations* and PWGSC Deputy Minister Directive 057 (DIR 057) *Asbestos Management*. Section 8 of the regulation requires that Asbestos-Containing Materials (ACMs) identified in an asbestos survey be inspected at reasonable intervals in order to determine their condition, and that the asbestos survey be updated at least annually.

An asbestos survey of the subject building was conducted in 2001¹, a reassessment survey is dated 2006² and an update asbestos survey is dated 2007³ (field work conducted in November 2006) to meet the requirements of O.Reg. 278/05. This update survey report completed by DST relies on information contained in these three past reports and should be read in conjunction with them.

2.0 Scope of Work and Methodology

DST conducted a walkthrough survey of the Taxation Data Centre to reassess the condition of previously identified ACMs. Building materials that had previously been identified as not containing asbestos were not reassessed.

All readily accessible materials were evaluated. DST did not collect samples during this update survey, but relied on the laboratory results of past reports. Observations, along with recommendations based on PWGSC DIR 057, are provided in Section 3.0. *The Annual Reassessment Survey Information Form*, was completed on site and inserted into the on-site *Asbestos Management Plan (AMP)* binder. A copy of this form is attached for reference. *The Annual Reassessment Checklist Form* is also attached, and must be inserted in the AMP binder. Plans indicating the location and extent of observed ACMs are also attached.

¹ SNC LAVALIN Engineers & Construction Inc. (2001) *Re-Assessment Survey of Asbestos Containing Material, 1050 Notre Dame Avenue, Sudbury, Ontario.*

² Pinchin Environmental (2006) *Asbestos Building Material Reassessment, 1050 Notre Dame, Sudbury, Ontario.*

³ DCS (2007) *Survey of Asbestos-Containing Materials, Taxation Data Centre, 1050 Notre Dame Avenue, Sudbury, Ontario.*



3.0 Update Survey Results

The following tables summarize the observations and recommendations with regards to ACMs observed at the facility.

Table 1. ACMs Observed at the Taxation Data Center

Location and Description	Friability	Condition	Accessibility	Action ¹	Asbestos Content ²	Approx. Quantity	Comment
First Floor							
Transite pipes found in the crawlspace	Non-Friable	Good	C (Concealed)	Routine Surveillance (7)	10.0% Chrysotile & 10.0% Crocidolite	100 m	Confined space. The inspection was limited to observations made from the entrance of the crawlspace.
Transite pipes found in Mechanical Storage Room	Non-Friable	Good	C (Exposed)	Routine Surveillance (7)	10.0% Chrysotile & 10.0% Crocidolite	5 m	
Transite pipes found in Mail Room	Non-Friable	Good	C (Exposed)	Routine Surveillance (7)	10.0% Chrysotile & 10.0% Crocidolite	5 m	
Transite pipes found in Mail & Records Storage and Equipment Room	Non-Friable	Good	C (Exposed)	Routine Surveillance (7)	10.0% Chrysotile & 10.0% Crocidolite	20 m	
Transite panels found in Corridor K10-14 (North of Boiler Room)	Non-Friable	Good	A	Routine Surveillance (7)	7.0 % Chrysotile	20 m	
Transite Panels found in Corridor 10G-k (West of Boiler Room)	Non-Friable	Good	A	Routine Surveillance (7)	7.0 % Chrysotile	30 m	
Transite pipes found in Mechanical Office	Non-Friable	Good	C (Exposed)	Routine Surveillance (7)	10.0% Chrysotile & 10.0% Crocidolite	5 m	
12"x12" Vinyl floor tiles found in Mechanical Office	Non-Friable	Good	A	Routine Surveillance (7)	5.6% Chrysotile	20 m ²	
Transite Pipes found in warehouse	Non-Friable	Good	C (Exposed)	Routine Surveillance (7)	10.0% Chrysotile & 10.0% Crocidolite	20 m	

Location and Description	Friability	Condition	Accessibility	Action ¹	Asbestos Content ²	Approx. Quantity	Comment
Transite Panels found in the Emergency Generator Room	Non-Friable	Good	A	Proactive ACM removal (5)	3.5 % Chrysotile	89 m ²	Approximately 5 m ² has reportedly been removed.
Transite Panels found in the Emergency Generator Room	Non-Friable	Fair	A	ACM Repair (6)	3.5 % Chrysotile	1 m ²	Approximately 3 panels of transite were observed at the time of the site visit to be damaged.
Transite Panels found in Transformer Vault Room	Non-Friable	Good	A	Routine Surveillance (7)	7.0 % Chrysotile	200 m ²	
Transite pipe found in Primary Switch Gear Room	Non-Friable	Good	C (Exposed)	Routine Surveillance (7)	10.0% Chrysotile & 10.0% Crocidolite	10 m	
Transite pipe found in Building Storage Room	Non-Friable	Good	C (Exposed)	Routine Surveillance (7)	10.0% Chrysotile & 10.0% Crocidolite	5 m	
Transite pipe found in Fitness Area Washroom	Non-Friable	Good	C (Concealed)	Routine Surveillance (7)	10.0% Chrysotile & 10.0% Crocidolite	10 m	Access to view the concealed pipe was obtained by the general fitness area.
Transite pipes found in the Boiler Room	Non-Friable	Good	C (Exposed)	Routine Surveillance (7)	10.0% Chrysotile & 10.0% Crocidolite	5 m	
Vinyl floor tiles found in the Lunch Room	Non-Friable	Good	A	Routine Surveillance (7)	5.6% Chrysotile	15 m ²	All tiles are considered to be in good condition.
Vinyl floor tiles found in Corridor 9B-D	Non-Friable	Fair	A	Proactive ACM removal (5)	5.6% Chrysotile	50 m ²	Approximately 5 or 6 tiles are cracked and broken.
Vinyl floor tiles found in the Kitchen Elevator.	Non-Friable	Fair	A	Proactive ACM removal (5)	5.6% Chrysotile	5 m ²	Approximately 2 or 3 tiles are cracked and broken.
Second Floor							
Transite panels found in the Main Entrance	Non-Friable	Good	C (Exposed)	Routine Surveillance (7)	7.0 % Chrysotile	200 m ²	Transite boards are covered with a non-asbestos containing texture coat. All visible surfaces are considered to be in good condition.

Location and Description	Friability	Condition	Accessibility	Action ¹	Asbestos Content ²	Approx. Quantity	Comment
Transite pipe found within the North Office Space (Stairwell Pipe Chases)	Non-Friable	Good	C (Concealed)	Routine Surveillance (7)	10.0% Chrysotile & 10.0% Crocidolite	5 m in each stairwell. Total of 20 m. (4 stairwells)	Based on limited visual into the pipe chase, the transite pipe was considered to be in good condition in all four pipe chases.
Vinyl floor tiles found in the Dark Room	Non-Friable	Good	A	Routine Surveillance (7)	5.6% Chrysotile	15 m ²	Approximately 11 12"x12" floor tiles have been replaced.
Vinyl floor tiles found in the Kitchen Storage Room	Non-Friable	Good	A	Routine Surveillance (7)	5.6% Chrysotile	10 m ²	
Vinyl floor tiles found in the Kitchen Office	Non-Friable	Good	A	Routine Surveillance (7)	5.6% Chrysotile	10 m ²	
Vinyl floor tiles found in the First Aid Room	Non-Friable	Good	A	Routine Surveillance (7)	5.6% Chrysotile	15 m ²	
Vinyl floor tiles found in the Storage room (East of First Aid Room)	Non-Friable	Good	A	Routine Surveillance (7)	5.6% Chrysotile	5 m ²	
Third Floor							
Transite pipes found in the Equipment Room (Elevator)	Non-Friable	Good	C (Exposed)	Routine Surveillance (7)	10.0% Chrysotile and 10.0% Crocidolite	4 m	
Transite pipes found within the North Office (Stairwell Pipe Chases)	Non-Friable	Good	C (Concealed)	Routine Surveillance (7)	10.0% Chrysotile and 10.0% Crocidolite	5 m in each stairwell. Total of 20 m. (4 stairwells)	Based on limited visual into the pipe chase, the transite pipe was considered to be in good condition in all four pipe chases.
Penthouse							
Transite pipes found in the Penthouse	Non-Friable	Good	C (Expose)	Routine Surveillance (7)	10.0% Chrysotile and 10.0% Crocidolite	100 m	

¹ For a full description of required action, see PWGSC DP 057 Action Matrix, available in the AMP.

² Asbestos content based on laboratory results from past reports.

4.0 Closure

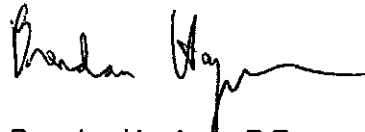
DST appreciates this opportunity to offer our services to PWGSC and anticipates another successful project. Should you or your colleagues have any questions or require additional information, please do not hesitate to contact the undersigned.

Yours truly,

For DST CONSULTING ENGINEERS INC.



fol
Micheline Gervais
Environmental Technologist
mgervais@dstgroup.com



Brendan Harrigan, P.Eng.
Associate, Sector Manager
bharrigan@dstgroup.com

Attachment: Site Plans
Annual Reassessment Survey Information Form
Annual Reassessment Checklist Form



1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE ASSOCIATED TECHNICAL REPORT.
2. THIS DRAWING IS BASED ON INFORMATION PROVIDED BY PAST DOS REPORT (2017).

QUESTIONS WITH FLOOR TALK



ASBESTOS-CONTAINING CEMENT PIPE



ASBESTOS-CONTAINING CERBER BOARD



73007 SAMPLE LOCATION FROM PAST REPORT

PROJECT TITLE		DATE		ISSUE		APPROVAL	
A		JAN 31		PRELIMINARY		H.G.	

ASBESTOS UPDATE SURVEY

DRAWING TITLE

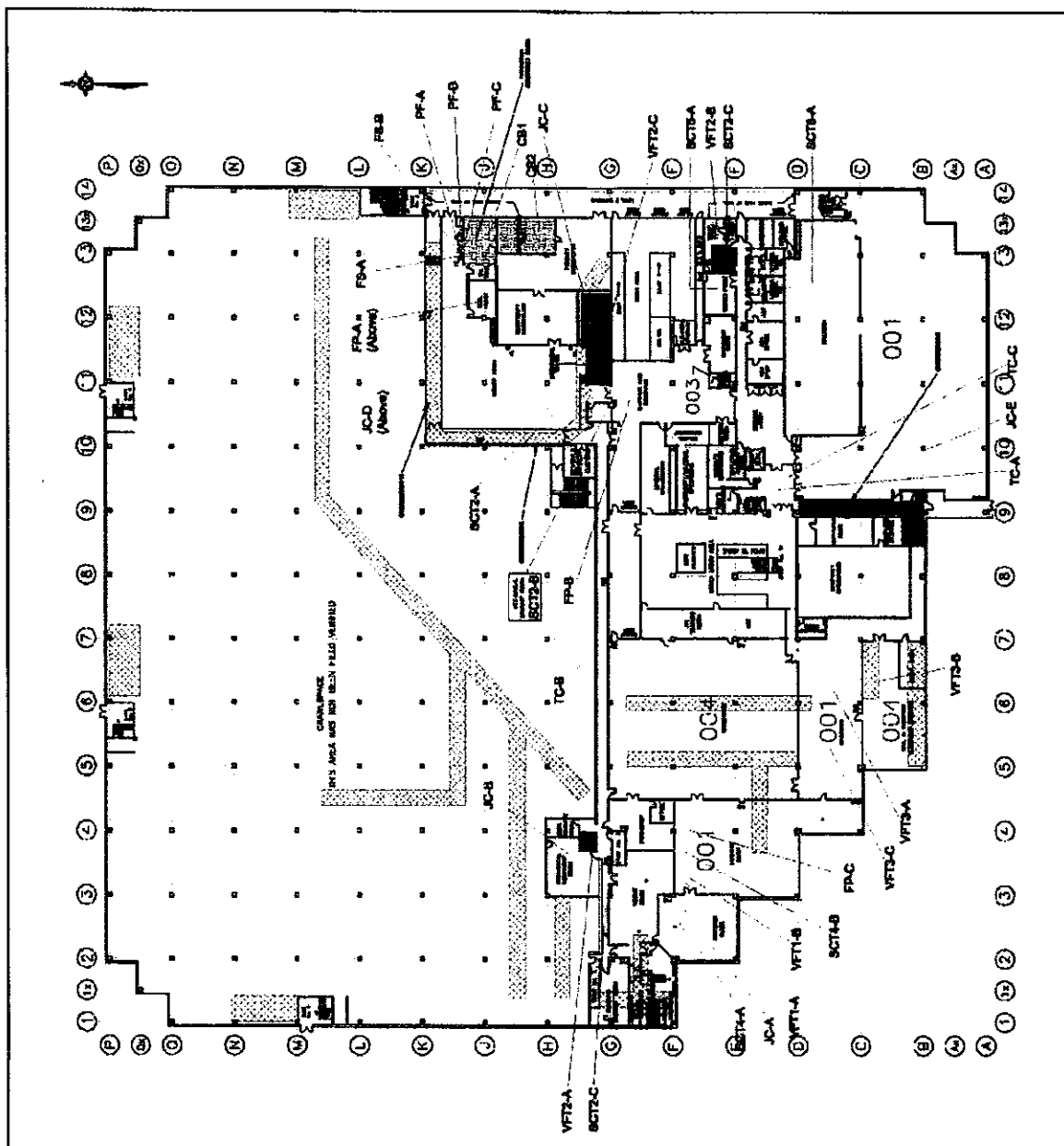
**Public Works and Government Services
Canada**

Taxation Data Centre

1050 Notre Dame Avenue, Sudbury, ON.

DESIGNED BY	DCS	SCALE	N.T.S.
DRAWN BY	S.M.	DATE	January 2008
APPROVED BY	M.G.	PROJECT NO.	BE-OT-008142

First Floor Plan





UNIT 4, 1361-E KELLY LAKE ROAD
SUDBURY, ONTARIO, P3E 6P6
TEL (705) 523-6850 FAX (705) 523-6890
www.dstgroup.com

NOTES:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE ASSOCIATED TECHNICAL REPORT.
2. THIS DRAWING IS BASED ON INFORMATION PROVIDED BY PAST DCS REPORT (2007).

LEGEND:



ASBESTOS VINYL FLOOR TILE



ASBESTOS-CONTAINING CEMENT PIPE



ASBESTOS-CONTAINING CEMENT BOARD

FP-E SAMPLE LOCATION FROM PAST REPORT (2007)

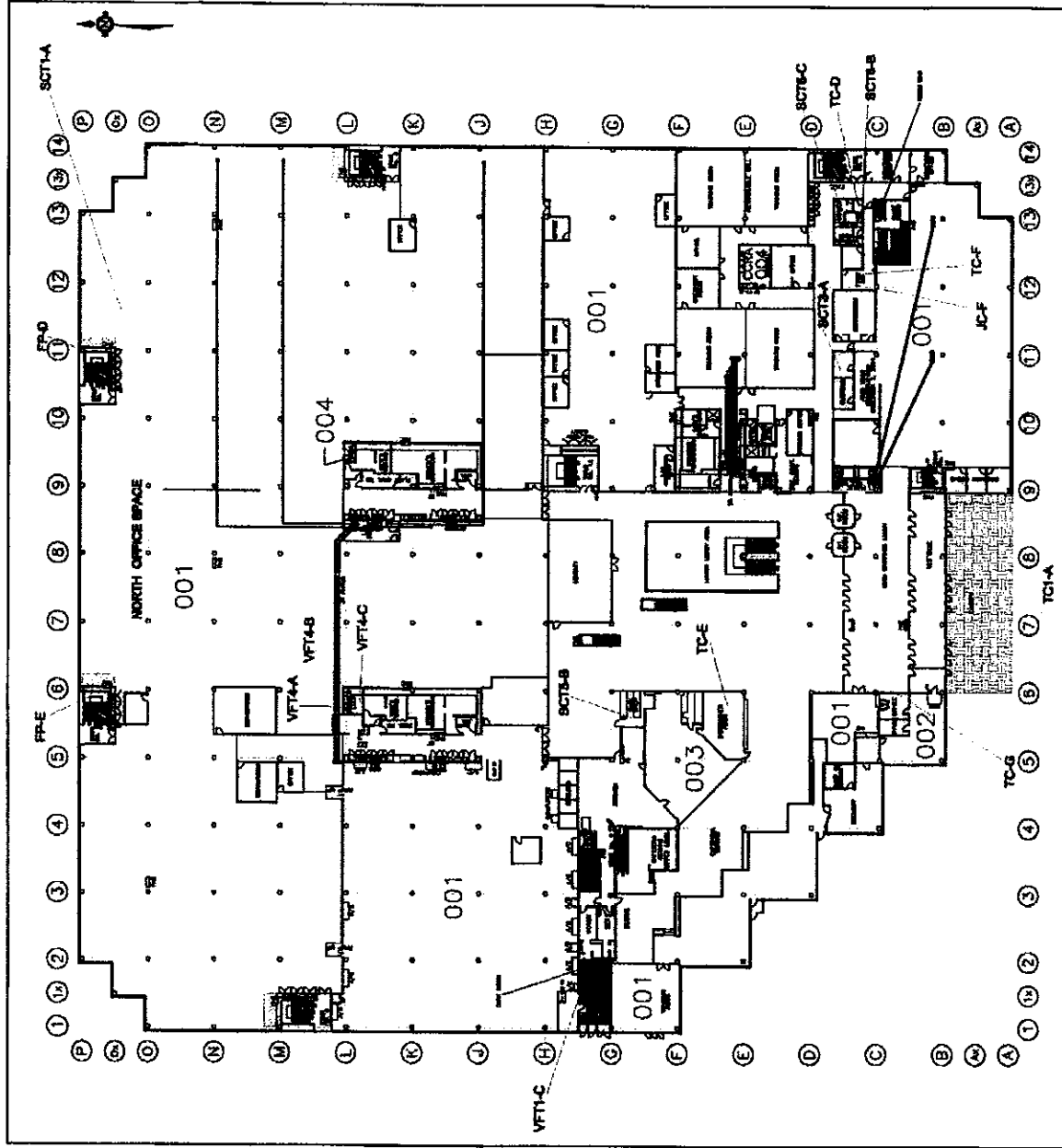
REV	DATE	ISSUE	APPROVAL
A	JAN 21	PRELIMINARY	M.G.

ASBESTOS UPDATE SURVEY

DRAWING TITLE
Public Works and Government Services
Canada
Taxation Data Centre
1050 Notre Dame Avenue, Sudbury, ON.

DESIGNED BY	DCS	SCALE	N.T.S.
DRAWN BY	S.M.	DATE	January 2008
APPROVED BY	M.G.	PROJECT NO.	BE-QT-008142

Second Floor Plan





UNIT 4, 1351-E KELLY LAKE ROAD
SUDBURY, ONTARIO, P3E 8P5
TEL (705) 623-8680 FAX (705) 623-8680
www.dsteng.com

NOTES:

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LEGEND:



ASBESTOS-CONTAINING CEMENT PIPE

FP-G SAMPLE LOCATION FROM PAST REPORT (2007)

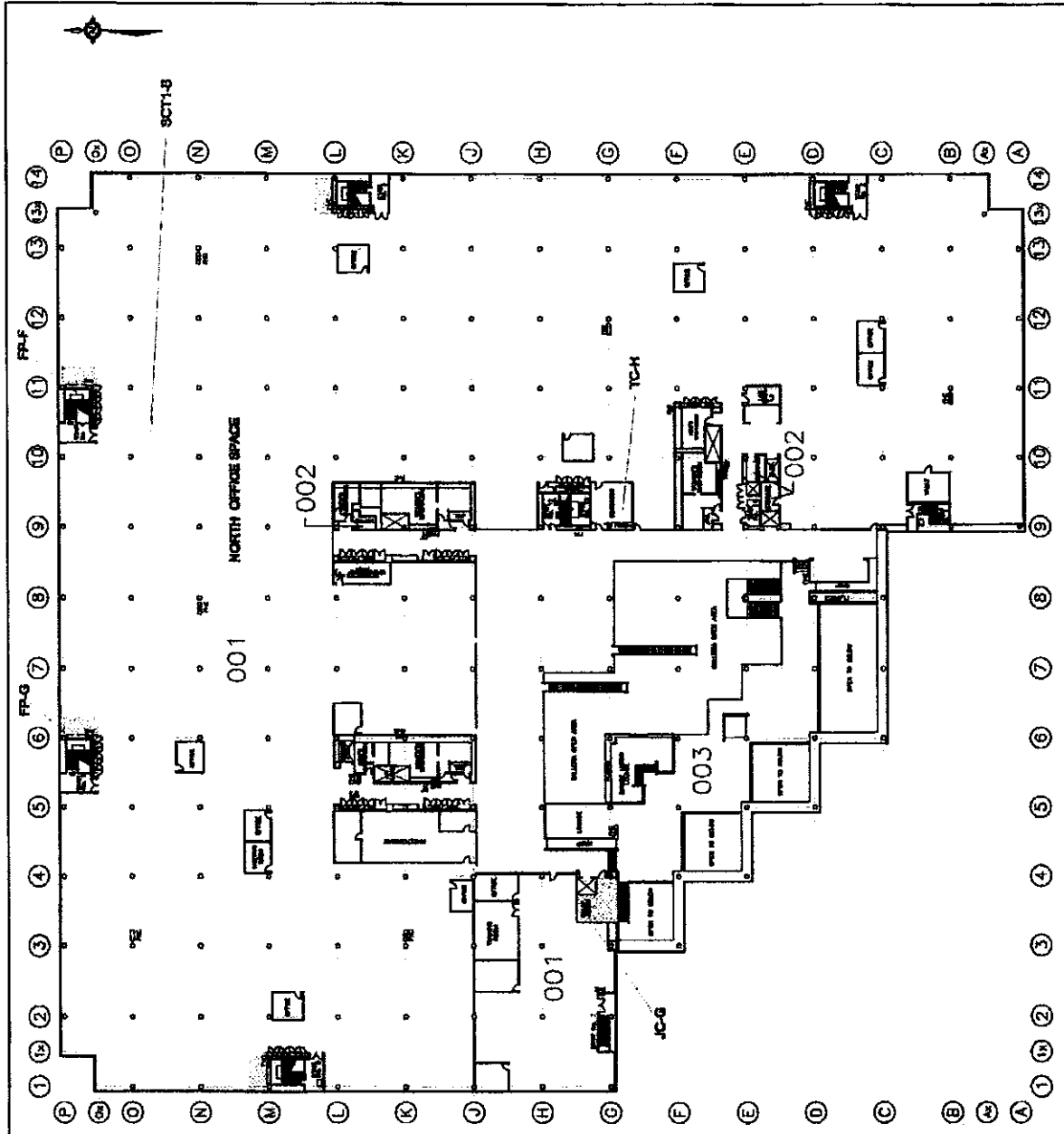
A	JAN 21	PRELIMINARY	M.G.
REV	DATE	ISSUE	APPROVAL
PROJECT TITLE			

ASBESTOS UPDATE SURVEY

DRAWING TITLE
Public Works and Government Services
Canada
Taxation Data Centre
1050 Notre Dame Avenue, Sudbury, ON.

DESIGNED BY	DCS	SCALE	N.T.S.
DRAWN BY	S.M.	DATE	JANUARY 2008
APPROVED BY	M.G.	PROJECT NO.	BE-OT-008142

Third Floor Plan





UNIT 4, 1351-E KELLY LAKE ROAD
SUDBURY, ONTARIO, P2E 5P5
TEL (705) 523-6860 FAX (705) 523-6850
www.dsgroup.com

NOTES:

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LEGEND:



ASBESTOS-CONTAINING CEMENT PIPE

PS-C SAMPLE LOCATION FROM PAST REPORT (2007)

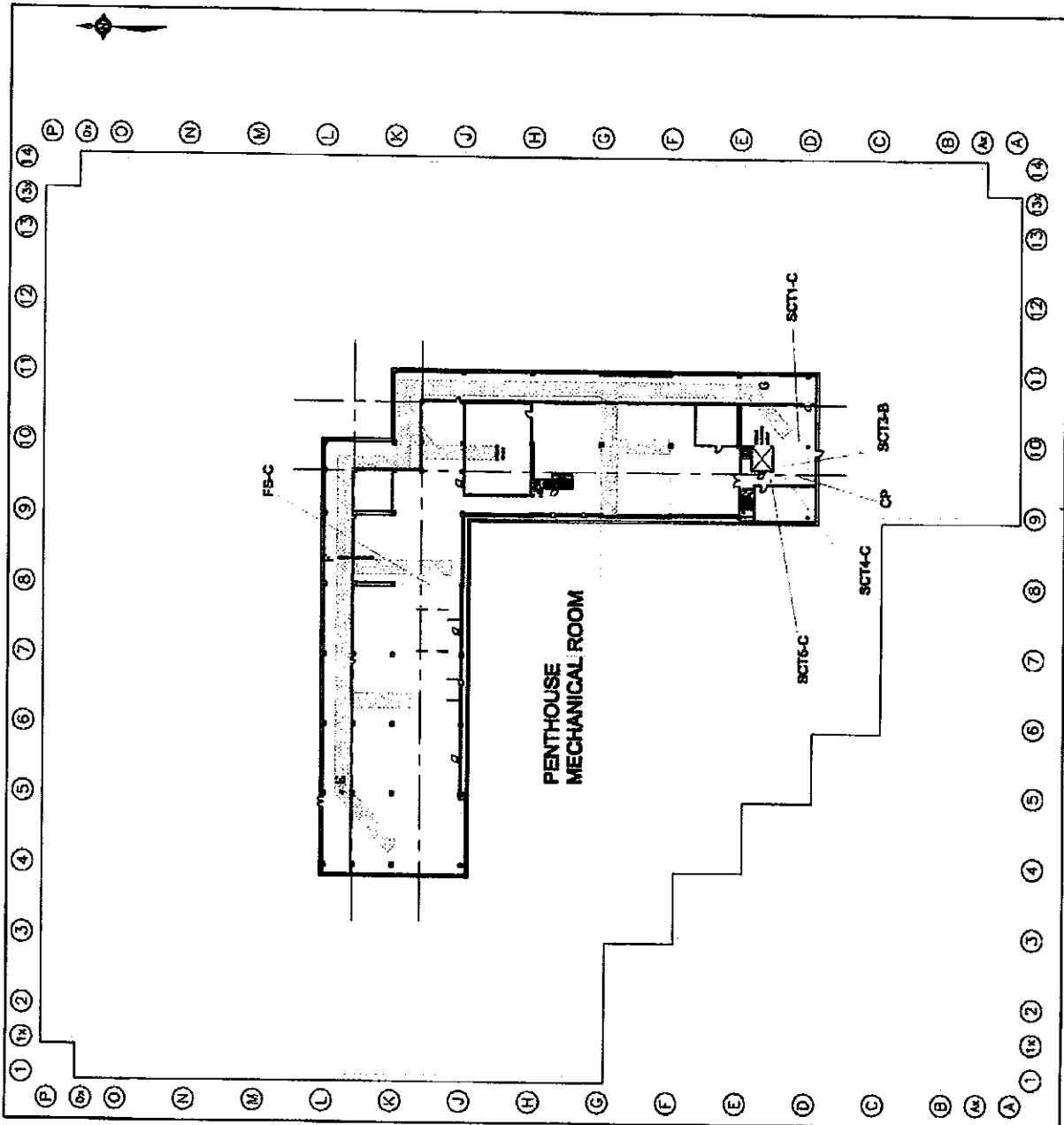
A	JAN 31	PRELIMINARY	M.G.
REV	DATE	ISSUE	APPROVAL
PROJECT TITLE			

ASBESTOS UPDATE SURVEY

DRAWING TITLE
Public Works and Government Services
Canada
Taxation Data Centre
1050 Notre Dame Avenue, Sudbury, ON.

DESIGNED BY	DCS	SCALE	N.T.S.
DRAWN BY	S.M.	DATE	January 2008
APPROVED BY	M.G.	PROJECT NO.	BE-OT-008142

Penthouse Floor Plan



ANNUAL REASSESSMENT SURVEY INFORMATION
TAXATION DATA CENTRE, 1050 NOTRE DAME AVENUE
SUDBURY, ONTARIO

Upon completion of Annual Reassessment Survey, fill out the following form in its entirety and file in this facility's Asbestos Management Plan under Appendix B.

Date of Asbestos Reassessment Survey: November 23rd / 2007

Organization Completing Asbestos Reassessment Survey: DST consulting Eng.

Name of all in attendance:

Representing:

Surveyors # 1: Micheline Gervais DST consulting Eng.

Surveyors # 2: _____

Other: _____

Other: _____

Other: _____

Other: _____

Summary of Survey findings:

Transit Board Previously Identified in Past Report from
SAC (Q.C.) was not observed at time of survey. The
shredding bin above hypom board ceiling. All other ACM
observed is considered to be in good condition at time
of survey. Please see Asbestos List in Survey Report.

Signature of Surveyors # 1: M. Gervais

Signature of Surveyors # 2: _____

Annual Reassessment Checklist
Taxation Data Center, 1050 Notre Dame Avenue
Sudbury, Ontario

Location and Description			Asbestos-Containing Building Materials ³ Quantities and Conditions		
Floor	Description	Room Name	Good ¹	Fail ²	Poor ²
LEVEL 1	Transite Pipes	Crawlspace	✓		
LEVEL 1	Transite Pipes	Mechanical Storage Room	✓		
LEVEL 1	Transite Pipes	Mail Room	✓		
LEVEL 1	Transite Pipes	Mail & Records Storage and Equipment Room	✓		
LEVEL 1	Transite Panels	Corridor K10-14 (North of Boiler Room)	✓		
LEVEL 1	Transite Panels	Corridor 10G-k (West of Boiler Room)	✓		
LEVEL 1	Transite Pipes	Mechanical Office	✓		
LEVEL 1	Vinyl Floor Tiles	Mechanical Office	✓		
LEVEL 1	Transite Pipes	Warehouse	✓		
LEVEL 1	Transite Panels	Emergency Generator Room		Approximately 3 panels of transite were observed to be damaged	
LEVEL 1	Transite Panels	Transformer Vault Room	✓		
LEVEL 1	Transite Pipe	Primary Switch Gear Room	✓		

¹ - Check box in GOOD column if all asbestos-containing materials are in GOOD condition.

² - If asbestos-containing materials in FAIR and POOR condition are present provide quantities and a brief description in the space provided. Refer to P.W.G.S.C. Code of Practice for definitions of GOOD, FAIR and POOR.

³ - As part of reassessment, include any relevant comments (such as additional suspected asbestos related materials)

Location and Description			Asbestos-Containing Building Materials ³ Quantities and Conditions		
Floor	Description	Room Name	Good ¹	Fair ²	Poor ²
LEVEL 1	Transite Pipe	Building Storage Room	✓		
LEVEL 1	Transite Pipe	Fitness Area Washroom	✓		
LEVEL 1	Transite Pipes	Boiler Room	✓		
LEVEL 1	Vinyl Floor Tiles	Lunch Room	✓		
LEVEL 1	Vinyl Floor Tiles	Corridor 9B-D		Approximately 5 or 6 tile were observed to be cracked and broken	
LEVEL 1	Vinyl Floor Tiles	Kitchen Elevator		Approximately 2 or 3 tiles were observed to be cracked and broken	
LEVEL 2	Transite Panels	Main Entrance	✓		
LEVEL 2	Transite Pipe	North Office Space (Four Stairwell Pipe Chases)	✓		
LEVEL 2	Vinyl Floor Tiles	Dark Room	✓		
LEVEL 2	Vinyl Floor Tiles	Kitchen Storage Room	✓		
LEVEL 2	Vinyl Floor Tiles	Kitchen Office	✓		
LEVEL 2	Vinyl Floor Tiles	First Aid Room	✓		

¹ – Check box in GOOD column if all asbestos-containing materials are in GOOD condition.

² – If asbestos-containing materials in FAIR and POOR condition are present provide quantities and a brief description in the space provided. Refer to P.W.G.S.C. Code of Practice for definitions of GOOD, FAIR and POOR.

³ – As part of reassessment, include any relevant comments (such as additional suspected asbestos related materials)

Annual Reassessment Checklist
Taxation Data Center, 1050 Notre Dame Avenue
Sudbury, Ontario

Page 3 of 3

Location and Description		Asbestos-Containing Building Materials ³ Quantities and Conditions		
Floor	Description	Room Name	Good ¹	Poor ²
LEVEL 2	Vinyl Floor Tiles	Storage Room (East of First Aid Room)	✓	
LEVEL 3	Transite Pipes	Equipment Room (Elevator)	✓	
LEVEL 3	Transite Pipes	North Office (Four Stairwell Pipe Chases)	✓	
Penthouse	Transite Pipes	Corridor, North Room and South Room	✓	

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³ - As part of reassessment, include any relevant comments (such as additional suspected asbestos related materials)