



FINAL **Hazardous Building** **Materials Assessment**

Hamlet Bridge Control Building, Hamlet, Ontario

Prepared for:

**Parks Canada, Ontario Waterways,
Trent-Severn Waterway**

2155 Ashburnham Drive, P.O. Box 567
Peterborough, Ontario K9J 6Z6

Attention: Mary MacLeod
Asset Manager

September 24, 2015

Pinchin File: 102740



Hazardous Building Materials Assessment

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Issued to: Parks Canada, Ontario Waterways, Trent-Severn Waterway
Contact: Mary MacLeod
Asset Manager
Issued on: September 24, 2015
Pinchin file: 102740
Issuing Office: 204-160 Charlotte Street, Peterborough, ON K9J 2T8
Primary Contact: Chris Moose - Project Manager

Author:

Rachel Northey, EIT, B.A.Sc.
Engineer in Training
(705) 748-4627 ext. 3606
rnorthey@pinchin.com

Reviewer:

Mike Wilson, B.Sc.
Regional Manager
(705) 748-4627 ext. 3601
mwilson@pinchin.com



EXECUTIVE SUMMARY

Parks Canada, Ontario Waterways, Trent-Severn Waterway (Client) retained Pinchin Ltd. (Pinchin) to conduct a hazardous building materials assessment of the Hamlet Bridge Control Building located in Hamlet, Ontario. The assessment was performed on August 14, 2015.

The objective of the assessment was to document the locations of specified hazardous building materials, evaluate their condition and develop corrective action plans as required for the purposes of long term management.

The assessed area consisted of the entire building. The building was occupied at the time of the assessment work.

SUMMARY OF FINDINGS

The following designated substances were confirmed to be present in the building:

Material	Description of Material	Locations (Quantity)	Recommendations
Lead	Painted finishes, solder on copper pipes.	Brown paint on exterior wood siding in good condition. Piping where present in the building.	In the absence of construction or maintenance activities, lead based materials should be managed in place. At the time of renovation or maintenance, observe the work procedures in the Ministry of Labour Guideline (MOL) if lead-containing materials are to be disturbed.
Silica	Poured concrete, masonry and mortar, grout.	Where present in the building.	Construction disturbance of silica-containing products may result in excessive exposures to airborne silica, especially if performed indoors and dry. Cutting, grinding or demolition of materials containing silica should be conducted with proper procedures and precautions as outlined by the MOL Silica on Construction Guideline.
Mercury	Florescent light tubes.	Throughout building.	Avoid inhalation of mercury vapour. Avoid breaking light tubes. If disposed of, waste light tubes should be treated as hazardous waste, due to mercury content. Pinchin recommends recycling fluorescent light tubes to reclaim mercury.



The following potentially hazardous substances were confirmed to be present in the building:

Material	Description	Locations	Recommendations
Ozone Depleting Substances (CFCs)	Refrigerator	Kitchen	When common household items containing CFCs (window mounted or standalone air conditioning units, refrigerators, freezers, etc.) are to be discarded, ensure that CFCs are removed by a provincially licensed technician specializing in the re-capture of CFCs prior to disposal.
Man-Made Mineral Fibres (MMMF)	Glass fibre and/or mineral wool.	Batt insulation in the basement and possibly in the attic.	If MMMF is affected by renovation or maintenance work, protect workers with gloves, respirators, and disposable coveralls as recommended by The Construction Safety Association of Ontario document "Synthetic Vitreous Fibres – Guidelines for Construction".

Please refer to Section 4.0 of this report for detailed recommendations regarding administrative and remedial actions.

This Executive Summary is subject to the same standard limitations as contained in the report and must be read in conjunction with the entire report.



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1.0 INTRODUCTION AND SCOPE

Parks Canada, Ontario Waterways, Trent-Severn Waterway (Client) retained Pinchin Ltd. (Pinchin) to conduct a hazardous building materials assessment of the Hamlet Bridge Control Building, located at Hamlet Bridge Control Building, Hamlet, Ontario.

The assessment was performed by Chris Moose on August 14, 2015. The surveyor was not accompanied during the assessment. The building was occupied at the time of the assessment.

The objective of the assessment was to document the locations of specified hazardous building materials, evaluate their condition and develop corrective action plans as required.

1.1 Scope of Assessment

The assessment was performed to establish the location and type of specified hazardous building materials incorporated in the structure and its finishes. The assessed area consisted of all parts of the building.

For the purpose of the assessment and this report, hazardous building materials are defined as follows:

- Asbestos;
- Lead;
- Silica; and
- Mercury.

The assessment also included:

- Polychlorinated Biphenyls (PCBs);
- Urea Formaldehyde Foam Insulation (UFFI);
- Ozone Depleting Substances; and
- Mould.



The following Ontario Designated Substances are not typically found in building materials in a composition/state that is hazardous and were not included in this assessment:

- Arsenic;
- Acrylonitrile;
- Benzene;
- Coke oven emissions;
- Ethylene oxide;
- Isocyanates; and
- Vinyl chloride monomer.

2.0 BACKGROUND INFORMATION

2.1 Building Description

Item	Details
Building Use	Bridge Control Building
Number of Floors/Levels	One storey with basement.
Total Area of Building (Square Feet)	200
Year of Construction	1965
Structure	Concrete.
Exterior Cladding	Wood.
HVAC	Electric baseboards.
Roof	Steel.
Flooring	Ceramic tile, vinyl floor tiles.
Interior Walls	Concrete, wood.
Ceilings	Acoustic ceiling tiles.

3.0 FINDINGS

3.1 Asbestos

3.1.1 *Suspect Building Materials Not Found*

The following types of building materials may historically contain asbestos but were not observed in the building and are not discussed in the report findings:

- Spray-applied fireproofing or thermal insulation;
- Texture finishes (acoustic/decorative);
- Vermiculite;
- Plaster;
- Drywall joint compound;
- Asbestos cement products;
- Vinyl sheet flooring;
- Firestopping; and
- Levelling Compound.

3.1.2 *Acoustic Ceiling Tiles*

Non-asbestos white (12" x 12") wood fibre ceiling tiles are present in the building. Building materials constructed of wood fibre historically do not contain asbestos.



Photo 1 – Wood fibre ceiling tiles.

3.1.3 *Vinyl Floor Tile and Mastic*

Non-asbestos white (12" x 12") peel and stick vinyl floor tiles are present in the building. Vinyl floor tiles were presumed to be non-asbestos based on visual new appearance of the tile (installed in the last five years).



Photo 2 – Non-asbestos peel and stick vinyl floor tiles

3.1.4 *Presumed Asbestos Materials*

A number of materials which might contain asbestos were not sampled during our assessment due to limitations in scope and methodology. Where present, these materials must be presumed to be an asbestos material and are best sampled during project planning and preparation of contract documents for their removal. Materials presumed to contain asbestos include:

- roofing, felts and tar;
- concrete floor levelling compound;
- caulking;
- electrical components or wiring within control centers, breakers, motors or lights, insulation on wiring; and
- adhesives.

3.2 **Lead**

3.2.1 *Paints and Surface Coatings*

Four paint samples were collected from interior and exterior painted finishes. The following table summarizes the analytical results for paints sampled and their locations.

Sample Number	Colour, Substrate Description	Locations	Lead (%)
L001	White paint on concrete	Basement	<0.012
L002	Grey paint on concrete	Floor	0.014
L003	Brown paint on wood	Exterior siding	0.12
L004	White paint on wood	Interior siding	<0.014

Brown paint on exterior siding is lead-based and was found to be in good condition and not flaking, peeling or delaminating.



Photo 3 – Lead-based brown paint on exterior siding.

Appendix II-B presents the bulk sample analytical results.

3.2.2 Lead Products and Applications

Lead products were not found during the survey.

3.2.3 Presumed Lead Materials

Lead may be present in a number of materials which were not assessed and/or sampled. The following materials, where found, should be considered to contain lead:

- solder on copper pipes.

3.3 Silica

Crystalline silica is a presumed component of the following building materials where present in the building:

- poured concrete, grout.



3.4 Mercury

3.4.1 Lamps

Mercury vapour is present in fluorescent lamps where present in the assessed area.

3.4.2 Mercury-Containing Devices

Mercury-containing devices were not found during the survey.

3.5 Ozone Depleting Substances

Ozone depleting substances may be present as a refrigerant in the refrigerator in the lunch room.

3.6 Mould

Visible mould growth was not found in the assessed area.

3.7 Man-Made Mineral Fibres

Glass and/or Mineral Wool insulation is present in the building as follows:

- Batt insulation in the basement and possibly in the attic (no access to attic).

3.8 Urea Formaldehyde Foam Insulation (UFFI)

UFFI was not found by the assessment.

4.0 RECOMMENDATIONS

4.1 General

Perform a detailed intrusive assessment prior to building renovation or demolition operations. The assessment should include; destructive testing (i.e. coring and/or removal of building finishes and components), and sampling of materials excluded from this report as identified by the last part of Section 3.1 of this report (i.e. roofing materials, caulking, mastics).

4.2 Remedial Work

No remedial work is required.

4.3 On-going Management and Maintenance

The following recommendations are made regarding on-going management and maintenance work involving the hazardous materials identified.



4.3.1 *Lead*

If construction activities affect lead based paints on the exterior of the building, protect workers using the precautions specified by current "Best Practice" documents such as the Environmental Abatement Council of Ontario (EACO) Lead Guideline or the Ontario Ministry of Labour Guideline "Lead on Construction Projects".

Recycle piping with lead based solder.

4.3.2 *Silica*

Disturbance of silica-containing products during maintenance activities may result in excessive exposures to airborne silica, especially if performed indoors and dry. Cutting, grinding, drilling or demolition of materials containing silica should be completed only with proper respiratory protection and other worker safety precautions that comply with provincial standards or guidelines.

4.3.3 *Mercury*

Recycle and reclaim mercury from fluorescent light tubes when taken out of service. Do not break lamps. Light tubes are accepted free of charge at many local recycling depots.

4.3.4 *Halocarbons*

Ozone depleting substances must be managed in accordance with the provincial and federal regulations (e.g. prohibition of release, recovery, record keeping, servicing by certified personnel, leak testing, etc.).

When common household items containing Halocarbons (window mounted or standalone air conditioning units, refrigerators, freezers, etc.) are to be discarded, ensure that Halocarbons are removed by a provincially licensed technician specializing in the re-capture of Halocarbons prior to disposal.

5.0 LIMITATIONS

The work performed by Pinchin Ltd. was conducted in accordance with generally accepted engineering or scientific practices current in this geographical area at the time the work was performed. No warranty is either expressed or implied by furnishing written reports or findings. The Client acknowledges that subsurface and concealed conditions may vary from those encountered or inspected. Pinchin Ltd. can only comment on the environmental conditions observed on the date(s) the survey is performed. The work is limited to those materials or areas of concern identified by the Client or outlined in our proposal. Other areas of concern may exist but were not investigated within the scope of this assignment.



Pinchin Ltd. makes no other representations whatsoever, including those concerning the legal significance of its findings or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issue, regulatory statutes are subject to interpretation and these interpretations may change over time. Pinchin Ltd. accepts no responsibility for consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The liability of Pinchin Ltd. or its staff will be limited to the lesser of the fees paid or actual damages incurred by the Client. Pinchin will not be responsible for any consequential or indirect damages. Pinchin is only liable for damages resulting from the negligence of Pinchin Ltd. All claims by the Client shall be deemed relinquished if not made within two years after last date of services provided.

Information provided by Pinchin Ltd. is intended for Client use only. Pinchin Ltd. will not provide results or information to any party unless disclosure by Pinchin Ltd. is required by law. Any use by a third party of reports or documents authored by Pinchin Ltd. or any reliance by a third party on or decisions made by a third party based on the findings described in said documents, is the sole responsibility of such third parties. Pinchin Ltd. accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted. No other warranties are implied or expressed.

6.0 REFERENCES

The following legislation and documents were referenced in completing the assessment and this report:

1. Asbestos on Construction Projects and in Buildings and Repair Operations, Ontario Regulation 278/05.
2. Designated Substances, Ontario Regulation 490/09.
3. Lead on Construction Projects, Ministry of Labour Guidance Document.
4. Ministry of the Environment Regulation, R.R.O. 1990 Reg. 347 as amended.
5. Surface Coating Materials Regulations, SOR/2005-109, Hazardous Products Act.
6. Silica on Construction Projects, Ministry of Labour Guidance Document.
7. Alert – Mould in Workplace Buildings, Ontario Ministry of Labour.

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Template: Master Report for Hazardous Materials Assessment Report (Management), Haz, December 10, 2014

APPENDIX I
Drawings



 LEAD BULK SAMPLE

Floor plan of the first floor showing the Kitchen, Washroom, and Office areas. The Kitchen is on the left, the Washroom is at the top center, and the Office is on the right. A door is located between the Kitchen and the Office. A small triangle icon with the label L003 is in the top left corner, and another with L004 is near the Washroom door.

A diagram showing two points, L001 and L002, within a rectangular frame. L001 is located at the bottom left corner, and L002 is located in the center of the frame. Both points are marked with a small triangle and labeled below it.

SCALE: NTS

1 OF 1

APPENDIX II
Lead Analytical Certificate



Analysis for Lead Concentration in Paint Chips

by Flame Atomic Absorption Spectroscopy
EPA SW-846 3050B/6010C/7420



Customer: Pinchin Ltd.
204-160 Charlotte Street
Peterborough ON K9J 2T8

Attn: Chris Moose
Mike Wilson

Lab Order ID: 1516364
Analysis ID: 1516364_PBP
Date Received: 8/21/2015
Date Reported: 9/11/2015

Project: Hamlet Bridge Control Building

Sample ID	Description	Mass	Concentration	Concentration
Lab Sample ID	Lab Notes	(g)	(ppm)	(% by weight)
L001	White paint on concrete block wall	0.0326	< 120	< 0.012%
1516364PBP_1				
L002	Grey paint on concrete floor	0.0607	140	0.014%
1516364PBP_2				
L003	Brown paint on exterior wood siding	0.0588	1200	0.12%
1516364PBP_3				
L004	White paint on interior wood siding	0.0296	< 140	< 0.014%
1516364PBP_4				

Unless otherwise noted blank sample correction was not performed on analytical results. Scientific Analytical Institute participates in the AIHA IHPAT program. IHPAT Laboratory ID: 173190. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. Analytical uncertainty available upon request. The quality control samples run with the samples in this report have passed all EPA required specifications unless otherwise noted. RL: (Report Limit for an undiluted 50ml sample is 4µg Total Pb).

Daniel Olson (4)


Analyst

Scientific Analytical Institute, Inc. 4604 Dundas Dr. Greensboro, NC 27407 (336) 292-3888

Laboratory Director

1516364

Version 1-15-2012

Client:	Pinchin Ltd.	<p>*Instructions:</p> <p>Use Column "B" for your contact info</p> <p>To See an Example Click the bottom Example Tab.</p> <p>Enter samples between "<<" and ">>"</p> <p>Begin Samples with a "<<" above the first sample and end with a ">>" below the last sample.</p> <p>Only Enter your data on the first sheet "Sheet1"</p> <p>Note: Data 1 and Data 2 are optional fields that do not show up on the official report, however they will be included in the electronic data returned to you to facilitate your reintegration of the report data.</p>	Invoice to:
Contact:	Chris Moose		Mike Wilson
Address:	160 Charlotte Street, Suite 204		mwilson@pinchin.com
City:	Peterborough, Ontario		
Phone:	705-748-4627		
Fax:	705-748-6927		
Email:	cmoose@pinchin.com	<p>Scientific Analytical Institute</p>  <p>4604 Dundas Dr.</p> <p>Greensboro, NC 27407</p> <p>Phone: 336.292.3888</p> <p>Fax: 336.292.3313</p> <p>Email: lab@sailab.com</p>	
cc email	mwilson@pinchin.com		
Project Name	Hamlet Bridge Control Building		
Pinchin File #	102740		
Date Submitted:	8/20/2015 0:00		
Analysis:	Lead in Paint		
TurnAroundTime:	144 Hours		

Sample Number	Data 1 (Lab use only)	Sample Description	Data 2 (Lab use only)
<<			
L001		White paint on concrete block wall	
L002		Grey paint on concrete floor	
L003		Brown paint on exterior wood siding	
L004		White paint on interior wood siding	

>>

Accepted



Rejected



Sheila

APPENDIX III
Methodology

1.0 GENERAL

Pinchin Ltd. conducts a room-by-room survey (rooms, corridors, service areas, exterior, etc.) to identify the designated substances and potentially hazardous substances as defined by the scope.

Information regarding the approximate quantity, location, and condition of designated substances and potentially hazardous substances encountered and visually estimated quantities are recorded. The locations of any samples collected are recorded on small-scale plans.

1.1 Limitations on Scope

The assessment excludes the following:

- Owner or occupant articles (e.g. stored items, furniture, appliances, etc.);
- Underground materials or equipment (e.g. vessels, drums, underground storage tanks, pipes, etc.);
- Building envelope, structural components, inaccessible or concealed materials or other items where sampling may cause consequential damage to the property;
- Energized systems (e.g. internal boiler components, elevators, mechanical or electrical components);
- Controlled products (e.g. stored chemicals, operational or process-related substances); and
- Materials not typically associated with construction (e.g. settled dust, spills, residual contamination from prior spills, etc.).

The assessment is limited to non-intrusive testing. Concealed spaces such as those above solid ceilings and within shafts and pipe chases are accessed via existing access panels only. Pinchin does not conduct demolition of walls, solid ceilings, structural items, interior finishes or exterior building finishes, to determine the presence of concealed materials.

1.2 Asbestos

Pinchin Ltd. conducts an inspection for the presence of friable and non-friable asbestos-containing materials (ACM). A friable material is a material that when dry can be crumbled, pulverized or powdered by hand pressure.



A separate set of samples is collected of each type of homogenous material suspected to contain asbestos. A homogenous material is defined by the US EPA¹ as material that is uniform in texture and appearance, was installed at one time, and is unlikely to consist of more than one type or formulation of material. The homogeneous materials are determined by visual examination, available information on the phases of the construction and prior renovations.

Pinchin collects samples at a rate that is in compliance with Table 1 of O.Reg. 278/05.

The sampling strategy is also based on known ban dates and phase out dates of the use of asbestos; sampling of certain building materials is not conducted after specific construction dates. In addition, to be conservative, several years past these dates are added to account for some uncertainty in the exact start / finish date of construction and associated usage of ACM.

Delineation of asbestos-containing drywall compound from newer, non-asbestos drywall compound is not conducted.

Flooring mastic or adhesive is sampled and analyzed if present on the underside of flooring samples (vinyl floor tile and vinyl sheet flooring).

Pinchin submits the bulk samples to a NVLAP² accredited laboratory for analysis. The analysis is performed in accordance with Test Method EPA/600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials, July 1993.

The asbestos analysis is completed using a stop positive approach. Only one result of greater than the regulated criteria (0.5%) is required to determine that a material is asbestos-containing, but all samples must be analyzed to conclusively determine that a material is non-asbestos. The laboratory stops analyzing samples from a homogeneous material once a result greater than the regulated criteria is detected in any of the samples of that material. All samples of a homogeneous material are analyzed if no asbestos is detected. In some cases, all samples are analyzed in the sample set regardless of result. Where building materials are described in the report as non-asbestos, or described as containing no asbestos, this is subject to the limitations of the analytical method used, and should be understood to mean no asbestos was detected.

¹ Environmental Protection Agency

² National Voluntary Laboratory Accreditation Program

Asbestos materials are evaluated in order to make recommendations regarding remedial work. The priority for remedial action is based on several factors:

- friability (friable or non-friable).
- condition (good, fair, poor, debris).
- accessibility (ranking from accessible to all building users to inaccessible).
- visibility (whether the material is obscured by other building components).
- efficiency of the work (for example, if damaged ACM is being removed in an area, it may be most practical to remove all ACM in the area even if it is in good condition).

This includes friability, condition and efficiency and practicality of the work.

1.3 Lead

Pinchin Ltd. collects samples of distinctive paint finishes and surface coatings present in more than a limited application, where removal of the paint is possible. Pinchin Ltd. collects samples by scraping the painted finish to include base and covering applications. Drawings included with this report show sample locations.

Analysis for lead in paints or surface coatings is performed in accordance with EPA Method No. 3050B/Method No. 7420; flame atomic absorption at an accredited laboratory.

For this report, all paints containing lead at a concentration of 0.009% or greater are discussed. Paint and surface coatings are evaluated for condition.

Lead building products (e.g. batteries, lead sheeting, flashing) are identified by visual observation only.

1.4 Silica

Pinchin Ltd. identifies building materials suspected of containing crystalline silica (e.g. concrete, cement, tile, brick, masonry, mortar) by knowledge of current and historic applications and visual inspection only. Pinchin Ltd. does not perform sampling of these materials for laboratory analysis of crystalline silica content.

1.5 Mercury

Building materials/products/equipment (e.g. thermostats, barometers, pressure gauges, light tubes), suspected to contain mercury were identified by visually inspection only. Dismantling of equipment suspected of containing mercury was not performed. Sampling of these materials for laboratory analysis of mercury content was not performed.

Mercury spills or damaged mercury-containing equipment was recorded where observed.

1.6 Ozone Depleting Substances (ODS)

Pinchin Ltd. determines the potential presence of ODS (chlorofluorocarbon, hydrochlorofluorocarbon, hydrofluorocarbon, halon, etc.) in air conditioning units, by visual inspection of manufactures' labels or plates, maintenance records, or log books, etc.

1.7 Visible Mould

Pinchin Ltd. identifies the presence of mould if visibly present in a significant quantity on exposed building surfaces. If any mould growth is concealed within wall cavities it is not addressed in this assessment.

Mould bulk samples were performed at the Pinchin Environmental Microbiology Laboratory, Mississauga. The Pinchin laboratory is independently accredited to ISO/IEC 17025:2005 for mould and bacteria analysis, by the American Industrial Hygiene Association (AIHA)³ and the Quebec Ministry of Sustainable Development, Environment and the Fight against Climate Change (MDDEP).⁴ The laboratory also participates in *Escherichia coli*, coliform bacteria and Heterotrophic Plate Count (HPC) proficiency testing program of the Canadian Association of Laboratory Accreditation (CALA) (Lab ID 3758).

1.8 Man-Made Mineral Fibres

Pinchin reviewed the building for the presence of man-made mineral fibres (MMMF). No destructive testing was performed to determine the extent of MMMF. Sampling of MMMF was not performed.

Where possible, Glass / Mineral Wool was identified separately from Refractory Ceramic Fibres (RCF) given the more stringent personal protective requirements needed when working with RCF.

1.9 Urea Formaldehyde Foam Insulation

Electrical cover plates were removed on exterior walls to verify the presence/absence of UFFI.

Testing to confirm the presence of Formaldehyde was not performed as visual identification and knowledge of historical uses of UFFI is sufficient.

³ Accredited by the American Industrial Hygiene Association Laboratory Accreditation Program LLC (AIHA LAP LLC) under the Environmental Microbiology Laboratory Accreditation Program (EMLAP), for Bulk, Surface and Air testing for moulds, and for Legionella testing (Lab ID 158835).

⁴ Accredited by the Quebec Ministry of Sustainable Development, Environment and the Fight against Climate Change (MDDEP) and the (Quebec) Institut de recherche Robert-Sauvé en santé et sécurité au travail (IRSST), under the Programme d'accréditation des laboratoires d'analyse (PALA) for Air Microbiology for Airborne Heterotrophic Plate Count, Airborne Mould and Yeast (Viable), Airborne Mould (DME), and Legionella.