



Hazardous Building Materials Assessment

25 2nd Avenue N,
Ashern, Manitoba

Prepared for:

Royal Canadian Mounted Police

1091 Portage Avenue
Winnipeg, MB R3G 0S6

Attention: Pamela Zagrodnik
Asset Coordinator

August 10, 2017

Pinchin File: 208339.001



Issued to: Royal Canadian Mounted Police
Contact: Pamela Zagrodnik
Asset Coordinator
Issued on: August 10, 2017
Pinchin File: 208339.001
Issuing Office: 54 Terracon Place, Winnipeg,
MB R2J 4G7
**Primary Pinchin
Contact:** Rodney Leagult, C.E.T.,
Senior Project Manager
204.452.0983 ext. 2251
rleagult@pinchin.com



Author: Leah Magura, B.A., EP
Project Technologist
204.452.0983 ext. 2253
lmagura@pinchin.com

Reviewer: Chris Smithson
Project Manager
204.452.0983 ext. 2245
csmithson@pinchin.com



EXECUTIVE SUMMARY

Royal Canadian Mounted Police (Client) retained Pinchin Ltd. (Pinchin) to conduct a hazardous building materials assessment of the detachment building located at 25 2nd Avenue N, Ashern, Manitoba. Pinchin performed the assessment on July 31, 2017.

The objective of the assessment was to identify specified hazardous building materials in preparation for building renovation. The results of this assessment are intended for use with a properly developed scope of work and performance specification.

The assessed area consisted of the entire building.

SUMMARY OF FINDINGS

Asbestos: Asbestos-containing materials (ACM) were confirmed to be present as follows:

- Original drywall joint compound throughout the building.

Lead: Lead was confirmed present in select paints/surface coatings and in bell and spigot fittings in cast iron pipes.

Silica: Crystalline silica is present in concrete, mortar, brick, masonry, ceramics, asphalt, etc.

Mercury: Mercury vapour is present in fluorescent lamps.

Polychlorinated Biphenyls (PCBs): PCBs are not observed in the building.

Mould: No mould-impacted materials were observed in the building.

SUMMARY OF RECOMMENDATIONS

The following is a summary of significant recommendations; refer to the body of the report for detailed recommendations.

1. Remove and properly dispose of ACMs prior to demolition or if disturbed by the planned renovation work.

Please refer to Section 4.0 of this report for detailed recommendations regarding administrative, renovation or demolition activities.

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

Royal Canadian Mounted Police (Client) retained Pinchin Ltd. (Pinchin) to conduct a hazardous building materials assessment of the detachment building, located at 25 2nd Avenue N, Ashern, Manitoba.

Leah Magura performed the assessment on July 31, 2017. The surveyor was unaccompanied during the assessment. The building was occupied at the time of the assessment.

The objective of the assessment was to identify specified hazardous building materials in preparation for building renovation. This assessment is intended to be used for pre-construction purposes only, and may not provide sufficient detail for long term management of hazardous materials as required by Health and Safety regulations. The results of this assessment are intended for use with a properly developed scope of work and performance specification.

1.1 Scope of Assessment

The assessment was performed to establish the location and type of specified hazardous building materials incorporated in the structure(s) 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;
- Mercury;
- Polychlorinated Biphenyls (PCBs); and
- Mould.

2.0 BACKGROUND INFORMATION

Building Description Item	Details
Number of Floors/Levels	Two storeys plus one below grade
Total Area of Building (Square Feet)	3,250
Year of Construction/Significant Additions/Renovations	1964 Original construction 1998 Window replacement and kitchen addition
Structure	Wood, concrete



Building Description Item	Details
Exterior Cladding	Brick veneer, stucco
HVAC	Forced air furnace
Roof	Pitched shingled
Flooring	Vinyl sheet flooring, carpet, ceramic tiles and concrete
Interior Walls	Drywall
Ceilings	Drywall

2.1 Existing Reports

Pinchin was provided, and instructed to rely upon, the following existing report:

- *“Phase I Environmental Site Assessment and Hazardous Materials Sampling”*, dated November 13, 2007, prepared By KGS Group, File No. 07-006-09.

2.2 Inaccessible Locations

The following rooms or areas of the building were not accessible to the surveyor and are therefore not included in the report:

Area or Room	Reason
Detached Garaged	Locked
Attic	Locked/ladder insufficient height
Cell Area	In use. Unauthorised access

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;
- Acoustic ceiling tiles;
- Plaster;

- Asbestos cement products; and
- Vinyl floor tiles and mastic.

3.1.2 *Texture Finishes*

Texture finish (stucco) is applied to concrete at the footer of the building (Samples 0002A-C). No asbestos was detected in the texture coat samples.

3.1.3 *Thermal Systems Insulation (TSI)*

3.1.3.1 *Pipe Insulation*

Pipes observed in the assessed area are either uninsulated or insulated with non-asbestos fibreglass.

Pipes insulated with friable asbestos insulations may be present in inaccessible spaces such as above solid ceilings, in chases and in column enclosures.

3.1.3.2 *Duct Insulation*

Ducts are either uninsulated or insulated with non-asbestos fibreglass and jacketed with either canvas or foil.



Photo 1: Ductwork in crawlspace. Uninsulated.

3.1.3.3 *Mechanical Equipment Insulation*

Mechanical equipment is either uninsulated or insulated with non-asbestos fibreglass.



Photo 2: Mechanical equipment uninsulated in basement.

3.1.4 *Drywall Joint Compound*

Drywall (gypsum board) and drywall joint compound is present as a wall and ceiling finish in the assessed area. As per the methodology, drywall joint compound is sampled at exterior walls, columns or other locations that are unlikely to have been renovated in an attempt to determine the presence of asbestos in the original drywall compound.

A total of four samples of drywall joint compound were collected (Samples 0001A-D) and it was found that one sample in the 2nd floor office contains chrysotile asbestos. The asbestos-positive results indicates that at minimum, the original drywall joint compound application contains asbestos and all drywall joint compound should be presumed to contain asbestos. Further sampling may be considered in an attempt to delineate asbestos-containing drywall compound from newer, non-asbestos drywall compound.

3.1.5 *Vinyl Sheet Flooring*

Vinyl sheet flooring is presumed to be non-asbestos based on historical knowledge of the type of flooring (foam) or based on the lack of a paper backing layer (underpad).



Photo 3: Vinyl sheet flooring observed in building.

3.1.6 Roofing Products

Sloped shingled roofing is present on the roof over the entire building and is not suspect to contain asbestos.

3.1.7 Caulking

Windows on the building were replaced in 1998. Caulking present on the windows are presumed to be non-asbestos based on the known date of installation.

3.1.8 Presumed Asbestos Materials

A number of materials which might contain asbestos were not sampled during the 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:

- Concrete floor levelling compound;
- Electrical components or wiring within control centers, breakers, motors or lights, insulation on wiring; and
- Adhesives and duct mastics.

3.2 Lead

3.2.1 Paints and Surface Coatings

A total of 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	Sample Locations	Lead (%)
L1	Green on drywall walls	Basement	0.01
L2	Beige on drywall walls	Main floor	<0.007
L3	Brown on interior doors and frames	Entrance vestibule	0.14
L4	White on drywall ceilings	Main floor	<0.006

All paints containing elevated levels of lead were found to be in good condition and not flaking, peeling or delaminating.

Appendix II presents the lead testing results.

3.2.2 Lead Products and Applications

Lead wool or lead caulking is present in bell and spigot fittings on cast iron pipes in the assessed area.

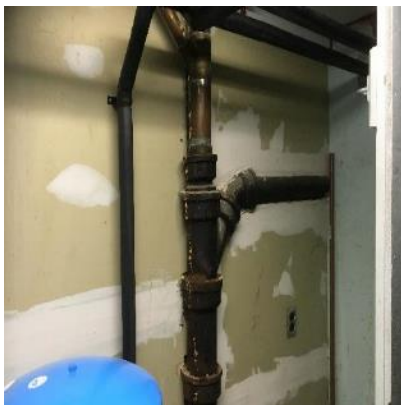


Photo 4: Uninsulated drain pipe with bell and spigot fittings.

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:

- Electrical components, including wiring connectors, grounding conductors, and solder.



3.3 Silica

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

- Poured or pre-cast concrete;
- Masonry and mortar; and
- Refractory or ceramic materials in high temperature mechanical or production equipment.

3.4 Mercury

3.4.1 Mercury-Containing Devices

Mercury-containing devices were not found during the assessment.

3.5 Polychlorinated Biphenyls

3.5.1 Lighting Ballasts

Based on information from the Client and confirmed by visual observations (evidence of T-8 fixtures) the building has been comprehensively re-lamped and will not contain PCB ballasts.

3.5.2 Transformers

Transformers were not found during the assessment.

3.5.3 Presumed PCB Materials

- Oil impregnated cables and potheads;
- Voltage regulators; and
- Paints.

3.6 Mould

Visible mould growth and water staining was not observed in the assessed area during the assessment.

4.0 RECOMMENDATIONS

4.1 General

1. Prepare plans and performance specifications for hazardous material removal required for the planned work. The specifications should include the scope of work, safe work practices, personal protective equipment, respiratory protection, and disposal of waste materials.

2. Investigate any items excluded from the scope of work of this report. Ideally this investigation will be performed as part of the development of the specifications, or at a minimum immediately prior to commencing renovations when the areas are no longer occupied. Specifically the following materials/areas need to be investigated.
3. Provide this report and the detailed plans and specifications to the contractor prior to bidding or commencing work.
4. Retain a qualified consultant to specify, inspect and verify the successful removal of hazardous materials.

4.2 Building Renovation Work

The following recommendations are made regarding demolition or renovation involving the hazardous materials identified.

4.2.1 Asbestos

Remove all asbestos-containing materials (ACM) prior to renovation, alteration, maintenance or demolition work or if ACM may be disturbed by the work.

If the identified ACM will not be removed prior to commencement of the work, disturbance of ACM must follow the appropriate asbestos precautions for the classification of work being performed.

ACMs must be disposed of at a landfill approved to accept asbestos waste.

4.2.2 Lead

Construction disturbance of lead in paint and coatings (or other materials) may result in over-exposure to lead dust or fumes. The need for work procedures, engineering controls and personal protective equipment will need to be assessed on a project-by-project basis and must comply with provincial standards or guidelines. Performing an exposure assessment during work that disturbs lead in paints and coatings may be able to alleviate the use of some of the precautions specified by these standards or guidelines.

Items painted with paints containing elevated levels of lead may be a hazardous waste. Test lead-painted materials for leachable lead and other metals prior to disposal.

Lead-containing items should be recycled when taken out of service or prior to building demolition.



4.2.3 Silica

Construction disturbance of silica-containing products 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.

4.2.4 Mercury

Do not break lamps. Recycle and reclaim mercury from fluorescent lamps when taken out of service.

4.2.5 Mould

No mould was observed; if mould is uncovered inside wall cavities during hand demolition, use appropriate precautions and protect workers using methods that comply with provincial guidelines.

5.0 TERMS AND LIMITATIONS

This work was performed subject to the Terms and Limitations presented or referenced in the proposal for this project.

Information provided by Pinchin is intended for Client use only. Pinchin will not provide results or information to any party unless disclosure by Pinchin is required by law. Any use by a third party of reports or documents authored by Pinchin 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 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. General Regulation – Workplace Safety and Health Act W210;
2. Workplace Health Hazard Regulation (Manitoba Regulation 217/2006 Workplace Safety and Health Regulation), under the Workplace Safety and Health Act;
3. Canadian Environmental Protection Act – SOR/92-507;
4. PCB Regulations, SOR/2008-273, Canadian Environmental Protection Act;
5. Manitoba Regulation MR 474/88, Manitoba PCB Regulation made under The Dangerous Goods Act;
6. Guide for Asbestos Management – Safe Work Manitoba (June 2016);



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7. A Guideline for Working with Lead – Workplace Safety and Health Branch – Manitoba labour and Immigration (2002); and
8. Guidelines for the Investigation, Assessment, & Remediation of Mould In Workplaces, Workplace Safety and Health Division, Manitoba Labour, 2001.

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Hazardous Building Materials Assessment 25 2 ave Ashern RCMP Aug 10 2017.docx

Template: Master Report for Hazardous Materials Assessment Report (Pre-Construction), Haz, July 20, 2017

APPENDIX I
Asbestos Analytical Certificates



Bulk Asbestos Analysis

By Polarized Light Microscopy
EPA Method: 600/R-93/116 and 600/M4-82-020



Customer: Pinchin Ltd.
54 Terracon Place
Winnipeg, MB R2J 4G7

Attn: Leah Magura
Rodney Legault

Lab Order ID: 1716676
Analysis ID: 1716676_PLM
Date Received: 8/3/2017
Date Reported: 8/7/2017

Project: 208339.000, Ashtern, MB, RCMP

Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
0001A	drywall joint compound, basement west mall, 500SF	None Detected		100% Other	White Non Fibrous Homogeneous
1716676PLM_1					Crushed
0001B	drywall joint compound, main floor office, exterior wall	None Detected		100% Other	White Non Fibrous Homogeneous
1716676PLM_2					Crushed
0001C	drywall joint compound, second floor office, ceiling	3% Chrysotile		97% Other	Tan Non Fibrous Homogeneous
1716676PLM_3					Crushed
0001D	drywall joint compound, second floor office, exterior wall	Not Analyzed			
1716676PLM_4					
0002A	parging/stucco, building exterior	None Detected		70% Quartz 30% Other	Tan, Gray Non Fibrous Heterogeneous
1716676PLM_5					Crushed
0002B	parging/stucco, building exterior	None Detected		70% Quartz 30% Other	Tan, Gray Non Fibrous Heterogeneous
1716676PLM_6					Crushed
0002C	parging/stucco, building exterior	None Detected		70% Quartz 30% Other	Tan, Gray Non Fibrous Heterogeneous
1716676PLM_7					Crushed

Disclaimer: Due to the nature of the EPA 600 method, asbestos may not be detected in samples containing low levels of asbestos. We strongly recommend that analysis of floor tiles, vermiculite, and/or heterogeneous soil samples be conducted by TEM for confirmation of "None Detected" by PLM. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAL. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government. Analytical uncertainty available upon request. Scientific Analytical Institute participates in the NVLAP Proficiency Testing program. Unless otherwise noted blank sample correction was not performed. Estimated MDL is 0.1%.

Heather Davide (7)

Analyst

Approved Signatory

APPENDIX II
Lead Analytical Certificates



Analysis for Lead Concentration in Paint Chips

by Flame Atomic Absorption Spectroscopy
EPA SW-846 3050B/6010C/7000B



Customer: Pinchin Ltd.
54 Terracon Place
Winnipeg, MB R2J 4G7

Attn: Leah Magura
Rodney Legault

Lab Order ID: 1716689
Analysis ID: 1716689_PBP
Date Received: 8/3/2017
Date Reported: 8/9/2017

Project: Ashern, MB RCMP

Sample ID	Description	Mass (g)	Concentration (ppm)	Concentration (% by weight)
Lab Sample ID	Lab Notes			
1	Paint - Green - Basement	0.0674	98	0.01%
1716689PBP_1				
2	Paint - Beige - Main floor office - exterior wall	0.0564	< 71	< 0.007%
1716689PBP_2				
3	Paint - Brown - interior doors and frames	0.0594	1400	0.14%
1716689PBP_3				
4	Paint - White - Main floor office - ceiling	0.0643	< 62	< 0.006%
1716689PBP_4				

Unless otherwise noted blank sample correction was not performed on analytical results. Scientific Analytical Institute participates in the AIHA ELPAT program. ELPAT 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

APPENDIX III
Methodology

1.0 GENERAL

Pinchin conducts a room-by-room survey (rooms, corridors, service areas, exterior, etc.) to identify the hazardous building materials as defined by the scope of work. All work is conducted in accordance with our own internal Standard Operating Procedures.

Information regarding the location and condition of hazardous building materials encountered and visually estimated quantities are recorded. The locations of any samples collected are recorded on small-scale plans.

As-built drawings and previous reports are referenced where provided.

1.1 Scope Limitations

The assessment excludes the following:

- Articles belonging to the owner, tenant or occupant (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.).

In occupied facilities, Pinchin only undertakes 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 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 EPA 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 and available information on the phases of construction and prior renovations.

Pinchin collects samples at a rate that is in compliance with the requirements of local regulations and guidelines.

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.

In some cases, manufactured products such as asbestos cement pipe are visually identified without sample confirmation.

Pinchin conducts limited demolition of masonry block walls (core holes) to investigate for loose fill insulation. The core holes are temporarily patched with expanding foam.

Pinchin undertakes sampling of roofing felts at the client's request. A temporary repair is made with asphalt-based mastic and fibreglass mesh. A more permanent repair is required if the roofing or the building is to remain in use for any extended period of time. Pinchin is not responsible or liable for leaks or water damage caused by sampling and or repair.

Flooring mastic/adhesive and leveling compounds are only sampled and analyzed if present on the underside of flooring samples (vinyl floor tile and vinyl sheet flooring).

If present, the following materials are presumed to be asbestos-containing and are best sampled immediately prior to commencing renovation/disturbance:

- Concrete floor levelling compound;
- Electrical components or wiring within control centers, breakers, motors or lights, insulation on wiring; and
- Adhesives and duct mastics.

Pinchin submits the bulk samples to a NVLAP 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.

In Manitoba an ACM is defined as materials containing 0.1% or more asbestos by weight for friable materials, 1% or more asbestos by weight for non-friable materials.

The asbestos analysis is completed using a stop positive approach. Only one result meeting the above regulated criteria 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 equal to or 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, this means that either no asbestos was detected by the analytical method utilized in any of the multiple samples or, if detected, it is below the lower limit of an asbestos-containing material in the applicable regulation.

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, damaged, debris); and
- 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).

1.3 Lead

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

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

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 such as flaking, chipping or chalking.

1.4 Silica

Pinchin 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 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 are identified by visual inspection only. Dismantling of equipment suspected of containing mercury is not performed. Sampling of these materials for laboratory analysis of mercury content is not performed.

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

1.6 Polychlorinated Biphenyls

Pinchin determines the potential for light ballasts to contain PCBs based on the age of the building, a review of maintenance records and examination of labels or nameplates on equipment, where present and accessible. The information is compared to known ban dates of PCBs and Environment Canada publications. Other than light ballasts and pole mounted transformers, all other liquid uses of PCBs should have been discontinued.

Pinchin records spills or leakage of suspect PCB-containing fluids where observed or identified in historical documents.

1.7 Visible Mould

Pinchin 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.

Master Template: Methodology Document for Hazardous Building Materials Pre-Construction, HAZ, October 18, 2016