



Durham Catholic District School Board

T17-17

St. Elizabeth Seton CS Child Care Expansion

ADDENDUM #1

Issued by: Purchasing Services
Durham Catholic District School Board
652 Rossland Road West
Oshawa, Ontario L1J 8M7

Complete and sign this document as indicated below to acknowledge the receipt of this Addendum and submit with Bid Documents.

Having carefully examined the Bid Documents for the above noted solicitation please be advised of the following clarification and/or additional information:

Addendum dated: November 8, 2017

Company Name: _____

Signature: _____



Hazardous Building Materials Assessment

St. Elizabeth Seton Catholic School
490 Stroud's Lane, Pickering, Ontario

Prepared for:

Durham Catholic District School Board
652 Rossland Road West,
Oshawa, Ontario, L1J8M7

Attention: Kevin Jones
Supervisor, Contract Management

November 8, 2017

Pinchin File: 213379



Hazardous Building Materials Assessment

St. Elizabeth Seton Catholic School, 490 Stroud's Lane, Pickering, Ontario
Durham Catholic District School Board

November 8, 2017
Pinchin File: 213379

Issued to: Durham Catholic District School Board
Contact: Kevin Jones
Supervisor, Contract Management
Issued on: November 8, 2017
Pinchin File: 213379
Issuing Office: 204-160 Charlotte Street, Peterborough, ON, K9J 2T8
Pinchin Contact: Chris Fennell
Project Manager

Author: _____
Adam Heizer, B.Sc.
Project Technologist
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Chris Fennell
Project Manager
705.748.4627 ext. 3605
cfennell@pinchin.com



EXECUTIVE SUMMARY

Durham Catholic District School Board (Client) retained Pinchin Ltd. (Pinchin) to conduct a hazardous building materials assessment at St. Elizabeth Seton Catholic School, 490 Stroud's Lane, Pickering, Ontario. Pinchin performed the assessment on October 26, 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 classroom 104 within the building scheduled to for renovation, as identified by the Client and shown on the drawings in Appendix I.

SUMMARY OF FINDINGS

Lead: Lead is present in batteries of emergency lights and fire alarm systems.

Silica: Crystalline silica is present in concrete, mortar, brick and masonry.

Mercury: Mercury vapour is present in fluorescent lamps.

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 mercury-containing items if disturbed by the planned renovation work.
2. Follow appropriate safe work procedures when handling or disturbing lead and silica.

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

Durham Catholic District School Board (DCDSB, Client) retained Pinchin Ltd. (Pinchin) to conduct a hazardous building materials assessment at St. Elizabeth Seton Catholic School, 490 Stroud's Lane, Pickering, Ontario.

Adam Heizer, Project Technologist performed the assessment on October 26, 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 was limited to the parts of the building within the area to be renovated. The extent of the assessed area was defined by the Client and is shown on the appended drawings.

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.

The following 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

Building Description Item	Details
Building Use	Elementary School
Number of Floors/Levels	Single Storey
Total Area of Assessed Area	800 square feet
Year of Construction	1995, 2001
Structure	Structural steel, block concrete
Exterior Cladding	Stone, Pre-cast concrete, Brick veneer
HVAC	Rooftop AC, Boiler and hot water heating to radiators
Roof	Not assessed
Flooring	Vinyl floor tile
Interior Walls	Concrete block
Ceilings	Acoustic ceiling tiles

2.2 Existing Reports

Pinchin has completed numerous assessments and referenced reports where applicable.

3.0 FINDINGS

The following section summarizes the findings of the assessment and provides a general description of the hazardous materials identified and their locations.

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 assessed area and are not discussed in the report findings:

- Texture finishes (acoustic/decorative);
- Plaster;
- Drywall joint compound;
- Asbestos cement products (e.g. Transite); and
- Vinyl sheet flooring.

3.1.2 *Spray-Applied Fireproofing and Thermal Insulation*

Based on the age of construction, spray applied insulation on the metal structure and deck does not contain asbestos.

3.1.3 *Thermal Systems Insulation (TSI)*

3.1.3.1 *Pipe Insulation*

Pipes are either uninsulated or insulated with non-asbestos fibreglass or elastomeric insulation (Armaflex).



Photo 1 – Non-asbestos fibreglass pipe insulation on heating system pipes above lay-in ceiling tiles in room 104.



Photo 2 – Uninsulated pipe above lay-in ceiling tiles in room 104.

3.1.3.2 *Duct Insulation*

Ducts are either uninsulated or insulated with non-asbestos fibreglass (foil-faced or canvas).



Photo 3 – Fiberglass insulated flex duct above lay-in ceiling tiles in room 104.

3.1.3.3 Mechanical Equipment Insulation

Mechanical equipment was not insulated in the assessed area.



Photo 4 – Uninsulated heating equipment above lay-in ceiling tiles in room 104.

3.1.4 Vermiculite

Loose fill vermiculite debris was not observed in the spaces or areas inspected. Destructive testing was not performed and vermiculite may be present within masonry block walls, above solid ceilings or other void spaces.

3.1.5 Acoustic Ceiling Tiles

Ceiling tiles without date stamps were sampled for asbestos. Samples a0001A-C taken from ceiling tiles do not contain asbestos.

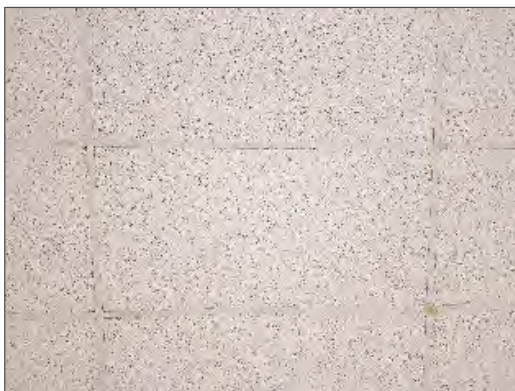


Photo 5 – Non-asbestos lay-in acoustic ceiling tile present within the assessed area.

3.1.6 Vinyl Floor Tile and Mastic

Vinyl floor tiles were presumed to be non-asbestos based on historical knowledge of the date of installation.

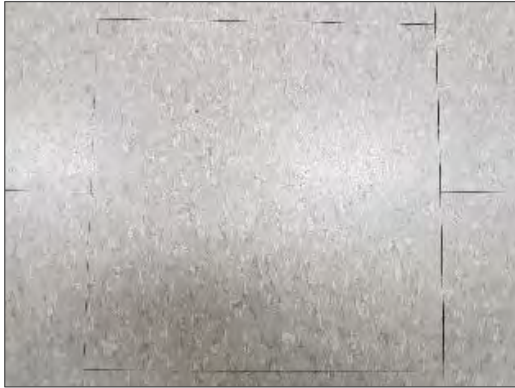


Photo 6 – Grey with white and dark-grey speckled floor tile present throughout the assessed area.

3.1.7 Sealants, Caulking, and Putty

Tan caulking at interior window frames does not contain asbestos (samples a0002A-C).



Photo 7 – Tan coloured caulking in Room 104 on window frame. Does not contain asbestos.

3.1.8 Presumed Asbestos Materials

A number of materials which might contain asbestos were not sampled during this assessment due to limitations in scope and methodology. Where present, these materials are presumed to contain asbestos until otherwise proven by sampling and analysis.

Materials presumed to contain asbestos include:

- Concrete floor levelling compound;
- Electrical components or wiring within control centers, breakers, motors or lights, insulation on wiring;
- Vermiculite in concrete block wall cavities;
- Mechanical packing, ropes and gaskets;
- Fire resistant doors or metal clad finishes; and
- Vibration dampers on HVAC equipment.

3.2 Lead

3.2.1 Paints and Surface Coatings

The following table summarizes the analytical results for paints sampled and locations:

Sample Number	Colour, Substrate Description	Locations	Lead %
L0001	Pale blue, cement block	Wall in room 104	<0.005%
L0002	Pale blue, metal beam	Metal beam in room 104	<0.005%
L0003	Blue, metal doorframe	Doorframe of room 104	<0.005%
L0004	Grey-blue, wood door	Wood door of room 104	0.01%

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

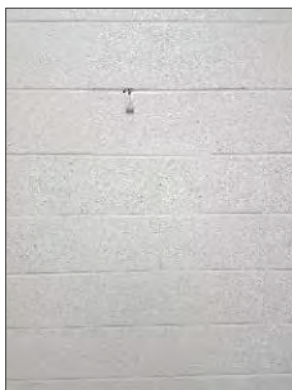


Photo 8 – Pale blue paint on wall.



Photo 9 – Pale blue paint on metal beam.



Photo 10 – Blue on metal door frame.



Photo 11 – Blue-grey on wood door.

3.2.2 *Lead Products and Applications*

Lead-containing batteries are present in emergency lighting.

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.
- Solder on pipe connections.

3.3 **Silica**

Crystalline silica is a presumed component of the following materials:

- Poured or pre-cast concrete.
- Masonry and mortar.

3.4 Mercury

3.4.1 Lamps

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



Photo 12 – Fluorescent lamps present in the assessed area.

3.4.2 Mercury-Containing Devices

Thermostat inspected did not contain liquid mercury ampules.



Photo 13 – Non-mercury thermostat present in assessed room.

3.5 Polychlorinated Biphenyls

3.5.1 Caulking

Caulking in the assessed areas was not suspected to contain PCBs due to the date of installation (after 1985).

3.5.2 Lighting Ballasts

Based on date of construction and confirmed by visual the building will not contain PCB ballasts.



3.5.3 Transformers

Transformers were not found during the assessment.

3.6 Mould

Visible mould growth was not found during the assessment.

4.0 RECOMMENDATIONS

4.1 General

Provide this report to the contractor prior to bidding or commencing work.

4.2 Building Renovation Work

The following recommendations are made regarding renovation involving the hazardous materials identified:

4.2.1 Lead

Analytical results indicate that all of the paints from the Site Building contain low levels of lead (i.e., less than the EACO guideline of 0.1% for lead-containing paints). Special precautions are not recommended unless aggressive disturbance (grinding, blasting, torching) is planned.

Dispose of painted non-metallic materials exceeding the criteria for leachable lead as hazardous waste. Well adhered paints containing elevated levels of lead on metal substrates do not require leachable lead analysis as the materials can be recycled with the paint intact.

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

4.2.2 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.

4.2.3 Mercury

Do not break lamps or separate liquid mercury from components. Recycle and reclaim mercury from fluorescent lamps when taken out of service. Liquid mercury is classified as a hazardous waste and must be disposed of in accordance with local regulations.



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. 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.

\\pinchin.com\pet\Job\213000s\0213379.000 DCDSB,StElizabeth,490StroudsLane,HBMA\Deliverables\HBMA report\213379 HBMA St Elizabeth Seton CS 90 Stroud's Lane Pickering DCDSB Nov 8 2017.docx

Template: Master Report for Hazardous Materials Assessment Report (Pre-Construction), Haz, September 13, 2017

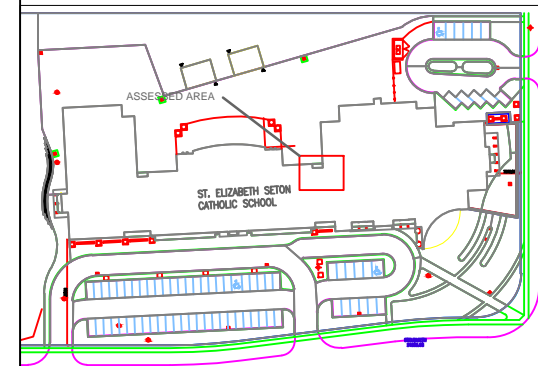
APPENDIX I
Drawing



LEGEND:

- ASBESTOS BULK SAMPLE
- LEAD BULK SAMPLE

KEY PLAN:



CLIENT:

DURHAM CATHOLIC DISTRICT SCHOOL BOARD

LOCATION:

ST. ELIZABETH SETON
490 STROUD'S LANE
PICKERING, ONTARIO

TITLE:

ROOM 104
HAZARDOUS BUILDING MATERIALS
ASSESSMENT - GROUND FLOOR

DATE:

2017/10/30

PROJECT #:

213379

DRAWN BY:

AH

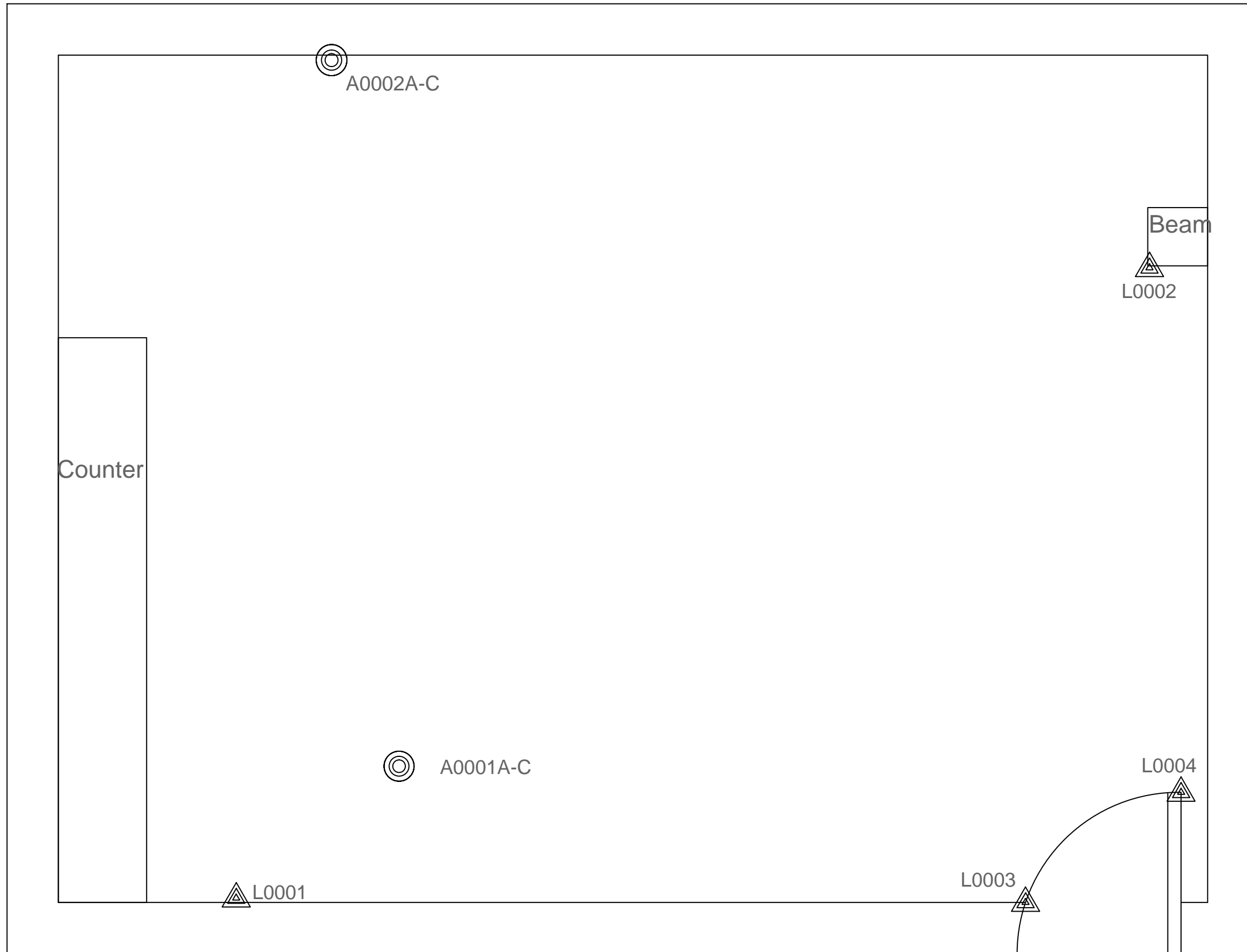
DRAWING:

1 OF 1

CHECKED BY:

SCALE:

NTS



APPENDIX II-A
Asbestos Analytical Certificates



Pinchin Ltd. Asbestos Laboratory Certificate of Analysis

Project Name:	Durham Catholic District School Board 490 Strouds Lane, Pickering, ON		
Project No.:	0213379.000		
Prepared For:	A. Heizer / C. Fennell	Date Received:	October 31, 2017
Lab Reference No.:	b179540	Date Analyzed:	November 3, 2017
Analyst(s):	A. Lebar Vertolli	# Samples submitted:	6
		# Phases analyzed:	6

Method of Analysis:

EPA 600/R-93/116 - Method for the Determination of Asbestos in Bulk Building Materials dated July, 1993

Bulk samples are checked visually and scanned under a stereomicroscope. Slides are prepared and observed under a Polarized Light Microscope (PLM) at magnifications of 40X, 100X or 400X as appropriate. Asbestos fibres are identified by a combination of morphology, colour, refractive index, extinction, sign of elongation, birefringence and dispersion staining colours. A visual estimate is made of the percentage of asbestos present. A reported concentration of less than (<) the regulatory threshold (see chart below) indicates the presence of confirmed asbestos in trace quantities, limited to only a few fibres or fibre bundles in an entire sample. This method complies with provincial regulatory requirements where applicable. Multiple phases within a sample are analyzed and reported separately.

Provincial Jurisdiction	Regulatory Threshold	Provincial Jurisdiction	Regulatory Threshold
Ontario, British Columbia, Nova Scotia	0.5%	Manitoba	0.1% friable 1% non-friable
Quebec	0.1%	Saskatchewan	0.5% friable 1% non-friable
Alberta, NWT, Yukon, Nunavut	1%	Newfoundland and Labrador, PEI and New Brunswick	1%

All bulk samples submitted to this laboratory for asbestos analysis are retained for a minimum of three months. Samples may be retrieved, upon request, for re-examination at any time during that period.

Pinchin Ltd. is accredited by the National Institute of Standards and Technology, National Voluntary Laboratory Accreditation Program (NVLAP Lab Code 101270-0) for the 'EPA-600/M4-82-020: Interim Method for the Determination of Asbestos in Bulk Insulation Samples,' and the 'EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials'; and meets all requirements of ISO/IEC 17025:2005.

This report relates only to the items tested.

NOTE: *This test report may not be reproduced, except in full, without the written approval of the laboratory. The client may not use this report to claim product endorsement by NVLAP or any agency of the U.S. Government. This report is valid only when signed in blue ink by the analyst. Vinyl asbestos floor tiles contain very fine fibres of asbestos and may be missed by some laboratories using the PLM method. Internal verification studies performed by Pinchin indicate that the chance of missing asbestos in floor tiles is no higher than about 2%. The vinyl tile study and laboratory documentation on measurement uncertainty is available upon request. The analysis of dust samples by PLM cannot be used as an indicator of past or present airborne asbestos fibre levels.*



Pinchin Ltd. Asbestos Laboratory Certificate of Analysis


Project Name: Durham Catholic District School Board
490 Strouds Lane, Pickering, ON
Project No.: 0213379.000
Prepared For: A. Heizer / C. Fennell

Lab Reference No.: b179540
Date Analyzed: November 3, 2017

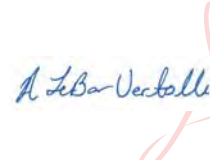
BULK SAMPLE ANALYSIS

SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	% COMPOSITION (VISUAL ESTIMATE)	
		ASBESTOS	OTHER
a0001A Ceiling tile in room 104	Homogeneous, beige, compressed, acoustic ceiling tile.	None Detected	Cellulose 25-50% Man-made Vitreous 25-50% Fibres Perlite 10-25% Other Non-Fibrous 0.5-5%
a0001B Ceiling tile in room 104	Homogeneous, beige, compressed, acoustic ceiling tile.	None Detected	Cellulose 25-50% Man-made Vitreous 25-50% Fibres Perlite 10-25% Other Non-Fibrous 0.5-5%
a0001C Ceiling tile in room 104	Homogeneous, beige, compressed, acoustic ceiling tile.	None Detected	Cellulose 25-50% Man-made Vitreous 25-50% Fibres Perlite 10-25% Other Non-Fibrous 0.5-5%
a0002A tan coloured caulking in room 104	Homogeneous, beige, caulking material.	None Detected	Non-Fibrous Material > 75%
a0002B tan coloured caulking in room 104	Homogeneous, beige, caulking material.	None Detected	Non-Fibrous Material > 75%
a0002C tan coloured caulking in room 104	Homogeneous, beige, caulking material.	None Detected	Non-Fibrous Material > 75%

Reviewed by:

 Digitally signed
by Julieth Oran
Date:
2017.11.06
14:52:51 -05'00'

Reporting Analyst:

 Digitally signed
by Julieth Oran
Date: 2017.11.06
14:52:38 -05'00'



Analyzed by: ASW
 Reviewed by: HB
 Report Sent by: JR



Special Instructions:

**Pinchin Ltd. - Asbestos Laboratory
 Internal Asbestos Bulk Sample Chain of Custody**

Client Name:	Durham Catholic District School Board	Project Address:	490 Strouds Lane, Pickering, ON
Portfolio/Building No:		Pinchin File:	213379
Submitted by:	Adam Heizer	Email:	aheizer@Pinchin.com
CC Results to:	cfennell@pinchin.com	CC Email:	
Invoice to:	cfennell@pinchin.com	Invoice Email:	cfennell@pinchin.com
Date Submitted:	October 27 2017	Required by:	November 2 2017
# of Samples:	6	Priority:	5 Day Turnaround
Year of Building Construction (Mandatory Field):	1995		
Do NOT Stop on Positive (Sample Numbers):			
Pinchin Group Company (Mandatory Field):	Pinchin		

To be Completed by Lab Personnel Only:

Lab Reference #:	<u>DTA.540</u>	Time:	24 hour clock		
Received by:	<u>OCT 31 2017 JR</u>	Date:	Month	Day	Year
Name(s) of Analyst(s):	<u>ASW</u>		<u>3-Nov-17</u>	<u>(6)</u>	

Sample Prefix	Sample No.	Sample Suffix	Sample Description/Location (Mandatory)
a	0001	A	Ceiling tile in room 104 <u>ND</u>
a	0001	B	Ceiling tile in room 104 <u>ND</u>
a	0001	C	Ceiling tile in room 104 <u>ND</u>
a	0002	A	tan coloured caulking in room 104 <u>ND</u>
a	0002	B	tan coloured caulking in room 104 <u>ND</u>
a	0002	C	tan coloured caulking in room 104 <u>ND</u>

APPENDIX II-B
Lead Analytical Certificates



Analysis for Lead Concentration in Paint Chips

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



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

Attn: Adam Heizer
Chris Fennell

Lab Order ID: 1722923
Analysis ID: 1722923_PBP
Date Received: 10/31/2017
Date Reported: 11/6/2017

Project: St. Elizabeth Seton

Sample ID	Description	Mass (g)	Concentration (ppm)	Concentration (% by weight)
Lab Sample ID	Lab Notes			
L0001	Paint - pale blue on cement block - room 104	0.0887	< 45	< 0.005%
1722923PBP_1				
L0002	Paint - pale blue on metal beam - room 104	0.0754	< 53	< 0.005%
1722923PBP_2				
L0003	Paint - blue on metal doorframe - room 104	0.0790	< 51	< 0.005%
1722923PBP_3				
L0004	Paint - grey-blue on wood door - room 104	0.0661	100	0.01%
1722923PBP_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).

Taylor Davis (4)

Analyst

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

Laboratory Director

1722923

Version 1-15-2012

Client:	Pinchin Ltd.
Contact:	Adam Heizer
Address:	160 Charlotte Street, Suite 204
City:	Peterborough, Ontario
Phone:	289.972.7921
Fax:	705-748-6927
Email:	aheizer@Pinchin.com
cc email:	cfennell@Pinchin.com
Project Name:	St. Elizabeth Seton
Pinchin File #:	213379
Date Submitted:	10/27/2017 0:00
Analysis:	Flame Atomic Absorption
TurnAroundTime:	120

***Instructions:**
 Use Column "B" for your contact info

To See an Example Click the bottom Example Tab.

Enter samples between "<<" and ">>"
 Begin Samples with a "<<" above the first sample and end with a ">>" below the last sample.
 Only Enter your data on the first sheet "Sheet1"

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.

Invoice to:
 Chris Fennell
cfennell@pinchin.com

Scientific Analytical Institute



4604 Dundas Dr.
 Greensboro, NC 27407
 Phone: 336.292.3888
 Fax: 336.292.3313
 Email: lab@sailab.com

Sample Number	Data 1 (Lab use only)	Sample Description	Data 2 (Lab use only)
<<			
L0001		paint - pale blue on cement block - room 104	
L0002		paint - pale blue on metal beam - room 104	
L0003		paint - blue on metal doorframe - room 104	
L0004		paint - grey-blue on wood door - room 104	

Baylley 10/31 AA

Accepted

Rejected

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 Limitations on Scope

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.).

The assessment includes limited demolition of wall and ceiling finishes (drywall or plaster) to view concealed conditions at representative areas as permitted by the current building use. Limited destructive testing of flooring is conducted where possible (under carpets or multiple layers of flooring). Demolition of exterior building finishes, masonry walls (chases, shafts etc.), and structural items is not conducted.

1.2 Asbestos

An inspection is conducted 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.

Samples are collected 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.

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. 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).

The following materials (if present) are not sampled and will be presumed to contain asbestos:

- Concrete floor levelling compound;
- Electrical components or wiring within control centers, breakers, motors or lights, insulation on wiring;
- Mechanical packing, ropes and gaskets;
- Vermiculite in concrete block wall cavities;
- Fibre reinforced paints and coatings;
- Paper products under wood flooring or metal or slate roofing;
- Fire resistant doors or metal clad finishes; and
- Exterior cladding.

The bulk samples are submitted 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.

Analytical results are compared to the following criteria.

Jurisdiction	Friable	Non-Friable
Ontario	0.5%	0.5%
Federal	1%	1%

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” or “does not contain 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, fair, poor, debris);
- Accessibility (ranking from accessible to all building users to inaccessible); 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

Samples of distinctive paint finishes and surface coatings present in more than a limited application, where removal of the paint is possible is collected. The samples are collected 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.

The Ontario Ministry of Labour (MOL) has not established a lower limit for concentrations of lead in paint, below which precautions do not need to be considered during construction projects. Pinchin follows the recommendations of the Environmental Abatement Council of Ontario (EACO) Lead Guideline for Construction, Renovation, Maintenance or Repair. The Guideline suggests that 0.1% (1,000 ppm) lead in paint represents a de minimis concentration of lead in paint for construction hygiene purposes, that is a concentration below which the lead content is not the limiting hazard in any disturbance of leaded paint for non-aggressive disturbance of painted finishes, (hand powered demolition, chipping, scraping, light sanding, etc.). The use of aggressive methods such as power grinding, torching, welding, etc. may result in significant lead exposures even with low concentrations of lead in paints (below 0.1%). Paint and surface coatings are evaluated for condition such as flaking, chipping or spalling.

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

Pinchin reviews the bulk samples results for elevated concentrations of lead. Where elevated concentrations are present, samples containing the highest concentrations per substrate (i.e., wood, concrete, plaster) are submitted for Toxicity Characteristic Leaching Procedure (TCLP) analysis. Analytical results are compared against local provincial requirements for waste characterization.

1.4 Silica

Building materials known to contain crystalline silica (e.g. concrete, cement, tile, brick, masonry, mortar) is identified by 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 visually 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.

1.6 Visible Mould

The presence of mould is determined by visual inspection of exposed building surfaces. If any mould growth is concealed within building cavities it is not addressed in this assessment.