

Asbestos Building Materials Assessment

Residential House
89 Salisbury Crescent
Brockville ON



Prepared for:
United Counties of Leeds & Grenville
100-25 Central Avenue West
Brockville ON K6V 4N6

Prepared by:
Stantec Consulting Ltd.
400-1331 Clyde Avenue
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Project No.: 122150275

February 15, 2017

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Executive Summary

Stantec Consulting Ltd. (Stantec) was commissioned by the United Counties of Leeds & Grenville (Leeds Grenville) to conduct an Asbestos Building Materials Assessment of the house (subject building), located at 89 Salisbury Crescent in Brockville, Ontario.

The purpose of the assessment was to assist the Leeds Grenville to meet the requirements of *Ontario Regulation 278/05 Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations*, as amended (O. Reg. 278/05), made under the *Occupational Health and Safety Act* (OHSA). The assessment includes the identification of building materials suspected to be asbestos-containing materials (ACMs) that may require special attention during the operation of the building.

The assessment is intended for the long-term management of asbestos-containing building materials to be included as part of an overall Asbestos Management Program (AMP) and not for construction or renovation purposes. The conclusions presented herein represent the findings for the residential house assessed. Intrusive inspections and additional testing of suspect ACMs and presumed asbestos-containing materials (PACMs) may be required to complement the information provided in this report if any work activities are planned which may disturb ACMs and/or PACMs.

The work was carried out in accordance with the requirements of the OHSA. The site work was conducted by Victoria Pereira on January 10, 2017.

Based on the visual assessment and laboratory analysis, ACMs were identified to be present in the form of:

- Paper-like ducting insulation (friable); and,
- Drywall joint-fill compound (non-friable).

These materials were observed to be in good condition.

The following building materials were observed to be present but not sampled, and are listed as PACMs:

- Exterior window caulking – white;
- Roof caulking; and,
- Roofing materials.

These materials were observed to be in good condition. These materials were not sampled to preserve their integrity. As these materials are known to have been manufactured with asbestos, they should be presumed to be asbestos-containing unless proven otherwise by laboratory analysis.

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Similar materials are likely to present in residential houses assessed and these should be treated as ACMs or PACMs.

The statements made in this Executive Summary text are subject to the same limitations included in this report, and are to be read in conjunction with the remainder of this report.

Recommendations pertaining to the handling, removal, disposal and management of identified asbestos-containing materials are provided within this report.

ASBESTOS BUILDING MATERIALS ASSESSMENT

February 15, 2017

1.0 INTRODUCTION

Stantec Consulting Ltd. (Stantec) was commissioned by the United Counties of Leeds & Grenville (Leeds Grenville) to conduct an Asbestos Building Materials Assessment of the house (subject building), located at 89 Salisbury Crescent in Brockville, Ontario.

The purpose of the assessment was to assist the Leeds Grenville to meet the requirements of *Ontario Regulation 278/05 Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations*, as amended (O. Reg. 278/05), made under the *Occupational Health and Safety Act* (OHSA). The assessment includes the identification of building materials suspected to be asbestos-containing materials (ACMs) that may require special attention during the operation of the building.

The assessment is intended for the long-term management of asbestos-containing building materials to be included as part of an overall Asbestos Management Program (AMP) and not for construction or renovation purposes. The conclusions presented herein represent the findings for a limited number of residential units. Intrusive inspections and additional testing of suspect ACMs and presumed asbestos-containing materials (PACMs) may be required to complement the information provided in this report if any work activities are planned which may disturb ACMs and/or PACMs.

The work was carried out in accordance with the requirements of the OHSA. The site work was conducted by Victoria Pereira on January 10, 2017.

2.0 SCOPE

The scope of work for this assessment involved the following:

- A review of existing information, including site drawings, previous assessment and/or abatement documentation and discussions with site personnel, where available;
- A visual assessment of readily accessible areas for the presence of asbestos-containing building materials;
- The collection of representative bulk samples from building materials suspected of containing asbestos fibres;
- Submission of samples collected for laboratory analysis; and,
- Evaluation and interpretation of field findings and laboratory analytical results to develop conclusions and recommendations pertaining to the management of ACMs and PACMs identified within the building.

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2.1 LIMITATIONS

This report reflects the observations made within accessed areas and the results of analyses performed on specific materials sampled during the assessment. Analytical results reflect the sampled materials at the specific sample locations.

Concealed spaces were assessed via existing access panels, where present. Interior and exterior finishes, solid ceilings, walls, flooring and structural elements were not removed to access concealed areas. An inaccessible area, where ACMs may be present includes, but is not limited to: ceiling spaces, wall cavities, crawlspaces, and buried materials.

Due to limitations on the agreed to scope of work for this project as well as physical limitations in accessing concealed areas and limitations associated with working in occupied/operational spaces, there are specific limitations to the information that can be provided for each suspect ACM or PACM considered in this assessment. The presence and asbestos content of some building materials could not be confirmed.

Building materials that may contain asbestos but were not accessible for sampling include, but are not limited to the following:

- Roofing materials;
- Sub-grade materials (e.g., asbestos cement drainage pipe);
- Flooring material concealed beneath carpeting, ceramic tile, brickwork, hardwood flooring, and/or concealed beneath existing sub-floors;
- Insulation material present inside walls (e.g., suspected asbestos-containing vermiculite insulation inside concrete block and/or brick walls);
- Drywall and/or wall plaster and associated finish materials concealed behind new and/or additional walls;
- Woven tape inside duct connection joints;
- Mechanical (e.g., piping and ducting) insulation within wall cavities, crawlspaces tunnels or other concealed spaces;
- Insulation materials inside fire doors;
- Window and door glazing compounds;
- Heating, ventilation and air conditioning (HVAC) units mechanical inner linings and/or inner ducting insulation;
- Heat protection materials inside mechanical installations and light fixtures; and,

2.1.1 Project-Specific Limitations

It should be noted that Leeds Grenville reported the following to have been replaced recently:

- Vinyl sheet flooring in the washroom;
- Ceramic tiles in the washroom, kitchen and foyer; and,
- Windows except the one (1) in the washroom.

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The following areas were not accessed, for the reasons indicated:

- Roof (no access/sloped).

2.1.2 Information from Previous Reports

Stantec was not provided with previous reports for review.

3.0 REGULATORY FRAMEWORK

Asbestos is included in the *Ontario Regulation, 490/09 Designated Substances*, as amended (O. Reg. 490/09) made under Ontario's OHSA, which primarily regulates worker exposure to asbestos during manufacturing of asbestos-containing products, but also includes requirements related to respiratory equipment, measurement of airborne fibres, and medical surveillance of exposed workers.

Ontario Regulation 278/05 clearly defines ACM as a material that contains 0.5 per cent or more asbestos by dry weight. Additionally, the regulation requires that the "record" (i.e., the Asbestos Building Materials Assessment) be updated at least once in each 12 month period or whenever the owner of the facility becomes aware of new information relating to the suspect and confirmed ACMs.

The general waste management regulation for the province of Ontario is *R.R.O. 1990, Regulation 347 General - Waste Management*, as amended (R.R.O. 1990, 347), under the *Environmental Protection Act* (EPA) of Ontario, sets out the requirements for the proper disposal of asbestos waste in Ontario. The waste must be placed in a double sealed container, properly labeled, free of cuts, tears or punctures and disposed of at a licensed waste station which has been properly notified of the presence of asbestos waste.

4.0 ASSESSMENT METHODOLOGY

Asbestos-containing materials are grouped into two classifications, friable and non-friable materials. Friable ACMs are those that can easily be crumbled or broken apart by mere hand pressure. When these materials break apart asbestos fibres are then released into the atmosphere. Non-friable ACMs or "manufactured products" are materials that by the nature of their manufacturing/construction do not readily allow the release of asbestos fibres. These materials should not be cut or shaped with power tools, since this procedure may allow for the release of the asbestos fibres. Some non-friable materials such as plaster, drywall and ceiling tiles are considered to be non-friable in an undisturbed state, but can release fibers when damaged or disturbed.

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It is Stantec's understanding that the subject building was constructed before 1990. This construction time period is consistent with those dates when asbestos-containing building materials were commonly used.

A visual assessment of accessible areas was undertaken in order to check for the presence of materials suspected of containing asbestos. Locations to collect discrete bulk asbestos samples of suspect building materials were identified. Samples of representative materials were then collected at these locations. An assessment of the condition and accessibility was completed for each occurrence of an ACM. The Public Works and Government Services Canada (PWGSC) document entitled *Deputy Ministers Directive 057 – Asbestos Management* (Last Revised June 16, 1999) was used as the basis for the criteria that was applied in evaluating the presence of ACMs and PACMs within the subject building, where applicable.

Samples of suspect ACMs from various building materials were collected and submitted to Paracel Laboratories Ltd. (Paracel) located in Ottawa, Ontario for analysis using Polarized Light Microscopy (PLM) with dispersion staining. The analysis was conducted following the U.S. EPA/600/R-93/116 Method. Paracel is certified under the National Voluntary Laboratory Accreditation Program (NVLAP) to perform asbestos analysis of bulk samples. Asbestos-containing materials are defined as a material that contains 0.5 per cent or more asbestos by dry weight.

A positive stop option was used. Multiple samples of visually similar material were collected and submitted for laboratory analysis. Once one sample within the set is identified to contain asbestos, further analysis of the subsequent samples is deemed to be unnecessary and not conducted.

4.1 FACILITY DESCRIPTION

The house located at 89 Salisbury Crescent is a two (2) bedroom, two (2) level building with a full basement. The reported construction date of the building is 1956. The typical structural components and finished associated with this building consist of brick exterior walls, various types of flooring including cement, wood, ceramic tiles and vinyl sheet flooring and interior concrete block and drywall walls and ceilings.

4.2 DOCUMENT REVIEW

Stantec was not provided with previous reports for review.

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5.0 FINDINGS

A summary list of the bulk samples collected by Stantec, including a description of the material, sampling location, type of analysis and laboratory test results is provided in **Appendix A**. A copy of the PLM Laboratory Certificates of Analysis for bulk samples collected is provided in **Appendix B**.

A summary of occurrences of ACMs and/or PACMs is provided in **Appendix C**. Each ACM occurrence includes the following information:

- Room component that contains ACM;
- Location of the ACM within the room space;
- ACM description;
- Estimated quantity;
- Original sample number or representative sample number;
- Friability;
- Condition; and,
- Comments regarding recommended actions.

Selected site photographs are provided in **Appendix D**.

5.1 FRIABLE ASBESTOS-CONTAINING MATERIALS

Friable building materials were observed to be present and identified by laboratory analysis to be asbestos-containing in the form of:

- Paper-like ducting insulation.

This material was observed to be in good condition.

5.2 NON-FRIABLE ASBESTOS-CONTAINING MATERIALS

Non-friable building materials were observed to be present and identified by laboratory analysis to be asbestos-containing in the form of:

- Drywall joint-fill compound (non-friable).

This material was observed to be in good condition.

It should be noted that drywall joint-fill compound is considered non-friable in its undisturbed state but can release fibers when damaged.

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Similar asbestos-containing materials are likely to present in units not assessed and should be treated as asbestos-containing materials. Materials not sampled should be presumed to be asbestos-containing.

5.3 PRESUMED ASBESTOS-CONTAINING MATERIALS

The following building materials were observed to be present but not sampled, and are listed as PACMs:

- Exterior window caulking – white;
- Roof caulking; and,
- Roofing materials.

These materials were observed to be in good condition. These materials were not sampled to preserve their integrity. As these materials are known to have been manufactured with asbestos, they should be presumed to be asbestos-containing unless proven otherwise by laboratory analysis.

5.4 NON-ASBESTOS-CONTAINING MATERIALS

It should be noted that Leeds Grenville reported the following to have been replaced recently:

- Vinyl sheet flooring in the washroom;
- Ceramic tiles in the washroom, kitchen and foyer; and,
- Windows except the one (1) in the washroom.

A summary list of the bulk samples collected during this assessment and confirmed to be non-ACMs by laboratory analysis is provided in **Appendix A**.

5.5 POTENTIAL FOR VERMICULITE INSULATION

Various walls of the subject building were comprised of masonry (concrete) blocks. Asbestos-contaminated vermiculite was historically used as insulating material in masonry block or brick walls. To assess for this potential ACM, destructive sampling is required, which was not conducted as part of this assessment. Although various holes, breaches and cracks were observed and no vermiculite was present, the presence of this potential ACM cannot be ruled out without destructive testing.

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6.0 RECOMMENDATIONS

Stantec recommends the following with regards to meeting the requirements of O. Reg. 278/05:

- Asbestos-containing materials that may be impacted during renovation and/or demolition activities should be removed prior to the renovation and/or demolition activities;
- Prior to renovation and/or demolition activities that would disturb them, undertake testing of PACMs that may be impacted to determine their asbestos content. Confirmed asbestos materials should be handled accordingly;
- Should a material suspected to contain asbestos fibres become uncovered during renovation and/or demolition activities, all work in the areas that may disturb the material should be stopped. Samples of the suspect material should be submitted for laboratory analysis to determine if asbestos fibres are present. Confirmed asbestos materials should be handled accordingly;
- If masonry block walls are to be impacted by renovation and/or demolition work, and these walls have not been checked for the presence of vermiculite insulation, intrusive assessments for vermiculite should be undertaken prior to planned renovation and/or demolition work. If vermiculite insulation is suspected to be present, this material should be treated as an ACM until testing can show otherwise; and,
- This report should be added to the Asbestos Management Program and referred to as the current asbestos record.

7.0 CLOSURE

This report has been prepared for the sole benefit of United Counties of Leeds & Grenville. The report may not be used or relied upon by any other person or entity without the express written consent of Stantec Consulting Ltd. and United Counties of Leeds & Grenville.

Any uses that a third party makes of this report, or any reliance on decisions based on it, are the responsibility of such third parties. Stantec Consulting Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted engineering and scientific practices current at the time the work was performed. Conclusions presented in this report should not be construed as legal advice.

The conclusions presented in this report represent the best technical judgment of Stantec Consulting Ltd. based on the data obtained from the work. The conclusions are based on the site conditions encountered by Stantec Consulting Ltd. at the time the work was performed at the specific assessment and/or sampling locations, and can only be extrapolated to an

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undefined limited area around these locations. The extent of the limited area depends on building construction and conditions, weather, building usage and other factors. Due to the nature of the investigation and the limited data available, Stantec Consulting Ltd. cannot warrant against undiscovered environmental liabilities.

If any conditions become apparent that differ significantly from our understanding of conditions as presented in this report, we request that we be notified immediately to reassess the conclusions provided herein.

We trust that the above is satisfactory for your purposes at this time. Should you have any questions or concerns, or require additional information, please do not hesitate to contact the undersigned at your convenience.

This report was prepared by Victoria Pereira and reviewed by Linda Fleet and Martin Ling.

Regards,

STANTEC CONSULTING LTD.



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ASBESTOS BUILDING MATERIALS ASSESSMENT

Appendix A
Summary of Results for Analysis of
Bulk Samples for Asbestos Content
February 15, 2017

Appendix A

Summary of Results for Analysis of Bulk Samples for Asbestos Content

Summary of Bulk Sample Analysis for Asbestos Type and Content

Sample Number	Sampling Location	Description of Sampled Material	Asbestos Type and Content	Analysis
89-BS-01A	Corridor - wall	Drywall Joint-Fill Compound	1% Chrysotile	PLM
89-BS-01B	Bedroom 1 - wall	Drywall Joint-Fill Compound	Positive Stop Not Analyzed	PLM
89-BS-01C	Kitchen - wall	Drywall Joint-Fill Compound	Positive Stop Not Analyzed	PLM
89-BS-01D	Living Room - wall	Drywall Joint-Fill Compound	Positive Stop Not Analyzed	PLM
89-BS-01E	Basement - wall	Drywall Joint-Fill Compound	Positive Stop Not Analyzed	PLM
89-BS-01F	Basement - wall	Drywall Joint-Fill Compound	Positive Stop Not Analyzed	PLM
89-BS-01G	Basement - bulkhead	Drywall Joint-Fill Compound	Positive Stop Not Analyzed	PLM
89-BS-02A	Basement - ducting	Paper-Like Duct Insulation	60% Chrysotile	PLM
89-BS-02B	Basement - ducting	Paper-Like Duct Insulation	Positive Stop Not Analyzed	PLM
89-BS-02C	Basement - ducting	Paper-Like Duct Insulation	Positive Stop Not Analyzed	PLM

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Appendix B
Laboratory Analytical Reports – Asbestos: Polarized Light Microscopy
February 15, 2017

Appendix B **Laboratory Analytical Reports – Asbestos: Polarized Light Microscopy**

Certificate of Analysis

Stantec Consulting Ltd. (Ottawa)

300-675 Cochrane Dr West Tower
Markham, ON L3R 0B8
Attn: Linda Fleet

Client PO: 122150275

Project: 122150275- 89 Salisbury

Custody:

Report Date: 20-Jan-2017

Order Date: 16-Jan-2017

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1703084-01	89-BS-01A
1703084-02	89-BS-01B
1703084-03	89-BS-01C
1703084-04	89-BS-01D
1703084-05	89-BS-01E
1703084-06	89-BS-01F
1703084-07	89-BS-01G
1703084-08	89-BS-02A
1703084-09	89-BS-02B
1703084-10	89-BS-02C

Approved By:



Emma Diaz

Senior Analyst

Any use of these results implies your agreement that our total liability in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

Certificate of Analysis
 Client: **Stantec Consulting Ltd. (Ottawa)**
 Client PO: **122150275**

Report Date: 20-Jan-2017
 Order Date: 16-Jan-2017
 Project Description: **122150275- 89 Salisbury**

Asbestos, PLM Visual Estimation **MDL - 0.5%**

Parcel I.D.	Sample Date	Layers Analyzed	Colour	Description	Asbestos Detected:	Material Identification	% Content
1703084-01	13-Jan-17	sample homogenized	Beige	Drywall Joint Compound	Yes	Client ID: 89-BS-01A Chrysotile	1
						Non-Fibers	99
1703084-02	13-Jan-17					Client ID: 89-BS-01B not analyzed	
1703084-03	13-Jan-17					Client ID: 89-BS-01C not analyzed	
1703084-04	13-Jan-17					Client ID: 89-BS-01D not analyzed	
1703084-05	13-Jan-17					Client ID: 89-BS-01E not analyzed	
1703084-06	13-Jan-17					Client ID: 89-BS-01F not analyzed	
1703084-07	13-Jan-17					Client ID: 89-BS-01G not analyzed	
1703084-08	13-Jan-17	sample homogenized	Grey	Pipe Wrap	Yes	Client ID: 89-BS-02A Chrysotile	60
						Cellulose	5
						Non-Fibers	35
1703084-09	13-Jan-17					Client ID: 89-BS-02B not analyzed	
1703084-10	13-Jan-17					Client ID: 89-BS-02C not analyzed	

**** Analytes in bold indicate asbestos mineral content.**

Analysis Summary Table

Analysis	Method Reference/Description	Lab Location	NVLAP Lab Code	*	Analysis Date
Asbestos, PLM Visual Estimation	by EPA 600/R-93/116	2 - Ottawa West Lab	200812-0		16-Jan-17

* Reference to the NVLAP term does not permit the user of this report to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

Work Order Revisions / Comments

None

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Appendix C
Summary of Occurrences of Asbestos-Containing Materials
February 15, 2017

Appendix C

Summary of Occurrences of Asbestos-Containing Materials

Summary of Occurrences of Asbestos-Containing Materials

Level	Room	Specific Location	ACM Location	ACM Type	Estimated Quantity	Sample Number	Original Sample?	Asbestos Content	Friable? Visible?	Access.	ACM Condition	Comments/ Notes
Basement	Basement	Below Ceiling	Ducting	Paper-Like Duct Insulation	3 sq.m	89-BS-02A	Yes	60% Chrysotile	Yes Yes	C	good	ACM
Exterior	Exterior	Exterior	Walls	Brick Mortar	NQ	NS	No	PACM	No Yes	A	good (PACM)	PACM
Exterior	Washroom						No		No			
Exterior	Washroom	Wall	Window	Exterior caulking - white	4 m	ns	No	PACM	No Yes	A	good (PACM)	PACM, OTHER WINDOW IN HOUSE WAS REPORTED TO HAVE BEEN REPLACED.
Main	Basement Stairwell / Landing	Walls and Ceiling	Walls and Ceiling	Drywall Joint-Fill Compound	15 sq.m	Ref: 89-BS-01A	No	1% Chrysotile	No Yes	A	good	ACM
Main	Bedroom 1	Walls and Ceiling	Walls and Ceiling	Drywall Joint-Fill Compound	40 sq.m	Ref: 89-BS-01A	No	1% Chrysotile	No Yes	A	good	ACM
Main	Bedroom 2	Walls and Ceiling	Walls and Ceiling	Drywall Joint-Fill Compound	40 sq.m	Ref: 89-BS-01A	No	1% Chrysotile	No Yes	A	good	ACM
Main	Corridor	Walls, Ceiling and Bulkheads	Walls, Ceiling and Bulkheads	Drywall Joint-Fill Compound	15 sq.m	89-BS-01A	Yes	1% Chrysotile	No Yes	A	good	ACM
Main	Kitchen	Walls and Ceiling	Walls and Ceiling	Drywall Joint-Fill Compound	50 sq.m	Ref: 89-BS-01A	No	1% Chrysotile	No Yes	A	good	ACM
Main	Living Room	Walls and Ceiling	Walls and Ceiling	Drywall Joint-Fill Compound	50 sq.m	Ref: 89-BS-01A	No	1% Chrysotile	No Yes	A	good	ACM

Accessibility Classification

- A - Areas of the building within reach (from floor level) of all building users
- B - Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder
- C - Areas of the building above 2.4 m where use of a ladder is required to reach the asbestos
- D - Areas of the building behind inaccessible solid ceiling systems, walls, or mechanical equipment, etc., where demolition of the ceiling, wall, or equipment, etc., is required to reach the asbestos

Visibility

- Yes - Suspect material is visible without opening hatches or lifting ceiling tiles
- No - Suspect material can only be viewed if access hatches are opened or ceiling tiles lifted.

* Based on a non-intrusive inspection of visible surfaces within the room space.

- Notes:
- ACM - asbestos-containing material
 - PACM - presumed asbestos-containing material
 - Access. - accessibility
 - nq - not quantified
 - na - not applicable
 - ns - not sampled
 - ref - reference sample
 - F - friable
 - NF - non friable
 - RCA - recommend corrective action
 - BS - bulk sample

Summary of Occurrences of Asbestos-Containing Materials

Level	Room	Specific Location	ACM Location	ACM Type	Estimated Quantity	Sample Number	Original Sample?	Asbestos Content	Friable? Visible?	Access.	ACM Condition	Comments/ Notes
Roof	Roof	Roof	Roofing	Roofing Materials	nq	ns	No	PACM	No Yes	C	unknown (PACM)	PACM
Roof	Roof	Roof	Roofing	Roof Caulking Materials	nq	ns	No	PACM	No Yes	C	unknown (PACM)	PACM

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 - PACM - presumed asbestos-containing material
 - Access. - accessibility
 - nq - not quantified
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 - ref - reference sample
 - F - friable
 - NF - non friable
 - RCA - recommend corrective action
 - BS - bulk sample

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Appendix D
Selected Site Photographs
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Appendix D **Selected Site Photographs**

ASBESTOS BUILDING MATERIALS ASSESSMENT

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Selected Site Photographs
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Photo 1: Asbestos-containing paper-like ducting insulation was observed to be in good condition in the basement.

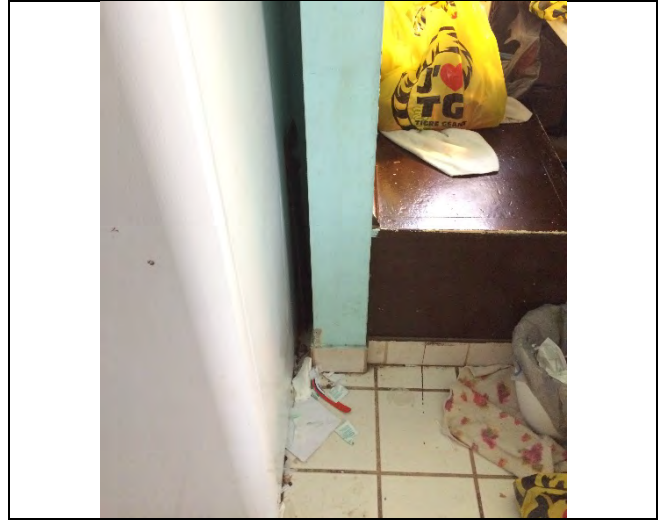


Photo 2: Asbestos-containing drywall joint-fill compound was observed in the kitchen.



Photo 3: Presumed asbestos-containing exterior window caulking was observed on washroom window.



Photo 4: Presumed asbestos-containing brick mortar on exterior walls.