Asbestos Reassessment

Juravinski Hospital
711 Concession Street,
Hamilton, Ontario

Prepared for:

Hamilton Health Sciences
1200 Main Street West
Hamilton, Ontario, L8N 1H4

January 8, 2025

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EXECUTIVE SUMMARY

Hamilton Health Sciences (Client) retained Pinchin Ltd. (Pinchin) to conduct an asbestos building materials reassessment of Juravinski Hospital located at 711 Concession Street, Hamilton, Ontario. The reassessment was performed on November 26, 2024 and November 27, 2024

The objective of the reassessment was to evaluate the condition and quantity of previously reported asbestos-containing materials (ACM) and develop corrective action plans as required for the purposes of long-term management. The results of this assessment are not intended for construction, renovation, demolition or project tendering purposes.

SUMMARY OF FINDINGS

Asbestos-containing materials (ACM) are present as follows:

- Pipe insulation
- Duct insulation
- Mechanical equipment insulation
- Acoustic ceiling tiles
- Plaster
- Paint
- Drywall joint compound
- Asbestos cement products
- Vinyl sheet flooring
- Vinyl floor tiles
- Floor mastic
- Bakelite
- Mastic on ducts and sinks
- Fibrous board
- Paper heat shields

SUMMARY OF RECOMMENDATIONS

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

1. Remediate any materials listed in the Remedial Recommendation Report in Appendix II.
2. Continue to apply the policies and procedures as outlined in the building's Asbestos Management Program (AMP).
3. Perform a reassessment of asbestos materials on an annual basis.
4. Prior to renovations or demolition, perform a pre-construction assessment to identify any hazardous materials that may be disturbed by the work.
5. Follow appropriate safe work procedures when handling or disturbing asbestos.

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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APPENDICES

1.0 INTRODUCTION AND SCOPE

Hamilton Health Sciences (Client) retained Pinchin Ltd. (Pinchin) to conduct an asbestos building materials reassessment at Juravinski Hospital, located at 711 Concession Street, Hamilton, Ontario.

Pinchin performed the reassessment on November 26, 2024 and November 27, 2024. The surveyor was unaccompanied during the reassessment. The assessed area was occupied at the time of the assessment.

The objectives of the reassessment were to document the locations, quantities and conditions of previously identified asbestos-containing building materials (ACM) and develop corrective action plans as required. This reassessment is only to be used for the purposes of long-term management and routine maintenance. The results of this reassessment are not to be used for construction, renovation, demolition or project tendering purposes.

1.1 Scope of Assessment

The objective of the reassessment was to evaluate the condition and quantity of previously reported ACM, and develop corrective action plans as required.

Additional objectives included the following:

- Assessment of any rooms/areas that were inaccessible during the previous assessment (if access could be obtained).

2.0 METHODOLOGY

Pinchin conducted an assessment of previously identified ACM to evaluate the current condition of all accessible materials identified in the most recent assessment. The surveyor made reference to any existing assessment or abatement reports (as provided by the Client).

As per the original scope of work, ceiling spaces were not assessed, and concealed locations such as shafts and chases were accessed via existing access panels. Our investigation did not include demolition of drywall or plaster walls to view concealed conditions. Structural items or exterior building finishes were not removed to determine the presence of concealed materials.

Please refer to Appendix I for a detailed description of the methodology used for this assessment.

3.0 BACKGROUND INFORMATION

3.1 Building Description

Description Item	Details
Use	Hospital
Year of Construction	05 Wing/R Wing was constructed in 1940 10 and 20 Wing/J Wing was constructed in 1992 and 2002 15 Wing/H Wing was constructed in 1990 25 Wing/K Wing was constructed in 2007 30 Wing/L Wing was constructed in 1982 40 Wing/M Wing was constructed in 1932 60 Wing/G Wing was constructed in 1963 89 Wing/O Wing was constructed in 1989 90 Wing Core was constructed around 1960-1962 90 Wing North/E Wing was constructed in 1962 90 Wing South/F Wing was constructed in 1960 A Wing was constructed in 2012 B Wing was constructed in 2010 C Wing was constructed in 2010 Concession Street Parking Garage was constructed in 1992/1993 Poplar Avenue Parking Garage was constructed in 1975
Structure	Structural steel, concrete, concrete block
Exterior Cladding	Pre-cast concrete, glass curtain wall, wood, masonry
HVAC	Forced air, boiler, and hot water heating to radiators
Roof	Built-up roofing
Flooring	Vinyl floor tile, vinyl sheet flooring, carpet, rubber, poured concrete, ceramic tiles, terrazzo
Interior Walls	Drywall, concrete block, poured concrete, glass curtain wall, plaster
Ceilings	Drywall, plaster, acoustic ceiling tiles

3.2 Existing Reports

Pinchin was provided with and instructed to rely upon, the following reports:

- Asbestos-Containing Materials Reassessment –Juravinski Hospital, June 16, 2017, Prepared By ECOH, Project No. 17429.
- Bulk Sample Analysis Report – Juravinski Hospital, May 25, 2017, Prepared By ECOH, Project No. 17429.

Pinchin most recently prepared the following reports which were used for reference:

- Asbestos Reassessment Report –Juravinski Hospital, dated February 1, 2024 (Pinchin File: 320566.054).
- HMIS 2.0 Online Database.

3.3 Inaccessible Locations

Inaccessible locations (rooms or areas), if any, are indicated in the HMIS 2.0 online database. These locations within the assessed areas were not accessible to the surveyor and are therefore not included in the report.

4.0 FINDINGS

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

For details on quantities, condition and locations of ACM; refer to the HMIS 2.0 online database.

The sample numbers referenced below refer to the analytical reports found in “336568.061 Asbestos Analytical Results Letter Juravinski Hospital January 8, 2025” on the HMIS 2.0 online database. Laboratory reference numbers have been included where applicable to distinguish sample numbers from previous projects. Sample numbers where “HHS” is present before a sample number indicates that the sample results were provided by HHS.

4.1 05 Wing/R Wing

4.1.1 Pipe Insulation

Parging cement, containing chrysotile asbestos (previously reported), is present in the Electrical Room (Location 4).

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

4.1.2 Duct Insulation

Ducts are uninsulated.

4.1.3 Mechanical Equipment Insulation

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

4.1.4 Plaster

Rough plaster present on the wall partitions within the Tunnel (Location 6) does not contain asbestos (047A-G, lab reference no. b54897, and 2018-0011A-C, lab reference no. b195703).

Single layer rough plaster present on walls and structural concrete beams and columns throughout the R Wing does not contain asbestos (samples 0001A-E, lab reference no. b180175).

Rough plaster on metal lath present in Basement Level One (Location 3) does not contain asbestos (samples 2018-0012A-C, lab reference no. b195703). Chrysotile asbestos was identified in plaster samples previously collected from this location (sample 0002A, phase b, lab reference no. b180175), however based on current analytical results and the laboratory notes it is believed that this asbestos was present as cross-contamination. Therefore, the plaster is considered to be non-asbestos.

4.1.5 Paint

Textured paint (photo 1), containing chrysotile asbestos (sample S0001A, lab reference no. b250758), is present on concrete block walls in the Electrical Room Office (Location 5).

Photo 1

4.1.6 Vinyl Floor Tile and Mastic

Vinyl floor tiles are present as follows:

Size, Pattern, Colour, Photo #	Location (Location #)	Sample Number, lab reference no.	Asbestos Type (tile)	Asbestos Type (mastic)
12” x 12”, beige flecks, photo 1	Basement Level Two (Location 1)	ECOH sample 16262-JH-01A Pinchin sample 2018-0013A-C, b195703	Chrysotile	None detected

Photo 1

4.1.7 *Caulking*

Cream caulking at perimeter windows does not contain asbestos (ECOH samples 16262-JH-02A-C).

Remaining caulking not sampled is presumed asbestos-containing.

4.2 10 and 20 Wing/J Wing

4.2.1 *Spray-Applied Insulation*

Spray-applied cementitious insulation throughout the J Wing is presumed to be non-asbestos based on the date of construction (1992 and 2002).

4.2.2 *Pipe Insulation*

Pipes are either uninsulated or insulated with fibreglass.

4.2.3 *Duct Insulation and Mastic*

Ducts are either uninsulated or insulated with fibreglass.

Red duct mastic throughout the J Wing does not contain asbestos (samples S0020A-C, lab reference no. 10009577).

4.2.4 *Mechanical Equipment Insulation*

Mechanical equipment is either uninsulated or insulated with fibreglass.

4.2.5 *Acoustic Ceiling Tiles*

Ceiling tiles are presumed to be non-asbestos based on the age of the materials determined from the age of the building construction (1992 and 2002). The tiles were manufactured after asbestos stopped being used in acoustic ceiling tiles.

4.2.6 *Drywall Joint Compound*

Asbestos in drywall joint compound was banned in Canada in 1980. Drywall joint compound in J Wing was installed on or after 1992 and is presumed to contain no asbestos.

4.2.7 *Asbestos Cement Products (Transite)*

Transite board (photo 1), presumed to contain asbestos based on visual observation, is present in fume hoods throughout J Wing.

Photo 1

4.2.8 *Sheet Flooring*

Sheet flooring present throughout J Wing is presumed to be non-asbestos based on historical knowledge of the date of installation (1992 and 2002) and the type of flooring (linoleum without paper backing layer).

4.2.9 *Vinyl Floor Tile and Mastic*

Vinyl floor tiles are present as follows:

Size, Colour/Pattern	Sample Number, Lab ref no.	Asbestos Type (tile)	Asbestos Type (mastic)
12”x12”, beige dense fleck	S0001A-C, b250756	None detected	None detected

Levelling compound associated with the vinyl floor tiles does not contain asbestos (samples S0001A-C, phase c, lab reference no. b250756).

Remaining vinyl floor tiles and mastic are presumed to be non-asbestos based on the date of installation (2002).

4.2.10 Firestopping

Red firestopping (mastic) present at pipe and conduit penetrations throughout the J Wing does not contain asbestos (samples S0021A-C, lab reference no. 10009577).

4.2.11 Other Building Materials

Tar (photo 1), containing chrysotile asbestos (sample S0006B, lab reference no. R6604935), is present on a pipe penetration on the Roof (Location 6001) above the mechanical penthouse. The tar is assumed to be present on the deck below the built-up roofing and therefore the roofing materials should be presumed to contain asbestos.

Photo 1 (photo taken during previous assessment)

4.3 15 Wing/H Wing

4.3.1 Pipe Insulation

Pipes are either uninsulated or insulated with fibreglass.

4.3.2 Duct Insulation and Mastic

Ducts are either uninsulated or insulated with fibreglass.

Grey and red duct mastic present throughout the H Wing does not contain asbestos (samples S0006A-C, lab reference no. 71981538 and S0024A-C, lab reference no. R7309727).

4.3.3 Mechanical Equipment Insulation

Mechanical equipment is either uninsulated or insulated with fibreglass.

4.3.4 Acoustic Ceiling Tiles

Ceiling tiles are presumed to be non-asbestos based on the age of the materials determined from the age of the building construction. The tiles were manufactured after asbestos stopped being used in acoustic ceiling tiles.

4.3.5 Drywall Joint Compound

Asbestos in drywall joint compound was banned in Canada in 1980. Drywall joint compound in H Wing was installed on or after 1990 and is presumed to contain no asbestos.

4.3.6 Sheet Flooring and Mastic

Sheet flooring present throughout H Wing is presumed to be non-asbestos based on historical knowledge of the date of installation (1990), and the type of flooring (linoleum without paper backing layer) and was confirmed non-asbestos by sampling (samples S0003A-C, phase A, lab reference no. 71981538).

Mastic present under sheet flooring throughout H Wing does not contain asbestos (samples S0003A-C, phase B, lab reference no. 71981538 and S0022A-C, lab reference no. R7309727).

4.3.7 Firestopping

White and red firestopping (mastic) present at pipe penetrations throughout the H Wing does not contain asbestos (samples S0001A-C and S0002A-C, lab reference no. 71981538).

4.3.8 Sealants, Caulking, and Putty

White caulking, containing chrysotile asbestos (sample S0018a, lab reference 71997469), is present at the bottom of the metal wall at structural steel beams in the Mechanical Penthouse (Location 3001).

Butyl, containing chrysotile asbestos (sample S0021A, lab reference R7309727), is present at door windows throughout the H Wing.

4.3.9 Other Building Materials

White mastic present as a sink undercoating in the H Wing does not contain asbestos (samples S0019A-C, lab reference no. R7309727).

4.4 25 Wing/K Wing

4.4.1 Spray-Applied Insulation

Fibrous spray-applied insulation present on structural steel beams in K Wing does not contain asbestos (samples S0005A-C, lab reference no. b246570).

Cementitious spray-applied insulation present on structural steel columns in K Wing does not contain asbestos (samples S0006A-C, lab reference no. b246570).

4.4.2 Pipe Insulation

Pipes are either uninsulated or insulated with non-asbestos fibreglass.

4.4.3 Duct Insulation

Ducts are either uninsulated or insulated with non-asbestos fibreglass.

4.4.4 Mechanical Equipment Insulation

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

4.4.5 Acoustic Ceiling Tiles

Ceiling tiles are presumed to be non-asbestos based on the age of the materials determined from the age of the building construction (2007). The tiles were manufactured after asbestos stopped being used in acoustic ceiling tiles.

4.4.6 Drywall Joint Compound

Asbestos in drywall joint compound was banned in Canada in 1980. Drywall joint compound in K Wing was installed on or after 2007 and is presumed to contain no asbestos.

4.5 30 Wing/L Wing

4.5.1 Spray-Applied Insulation

Green tinted cementitious spray-applied fireproofing present on structural steel, including beams, columns bracing and deck throughout the building, does not contain asbestos. The fireproofing is presumed to be non-asbestos due to the green colour which was added to indicate the fireproofing does not contain asbestos.

Beige fibrous fireproofing present on beams throughout the L Wing does not contain asbestos (samples 038a-g, lab reference no. b54896).

4.5.2 Pipe Insulation

Pipes 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, in column enclosures and within shafts.

4.5.3 Duct Insulation and Mastic

Ducts are uninsulated.

Red duct mastic (photo 1), presumed to contain asbestos, is present in the Mechanical Room (Location 7).

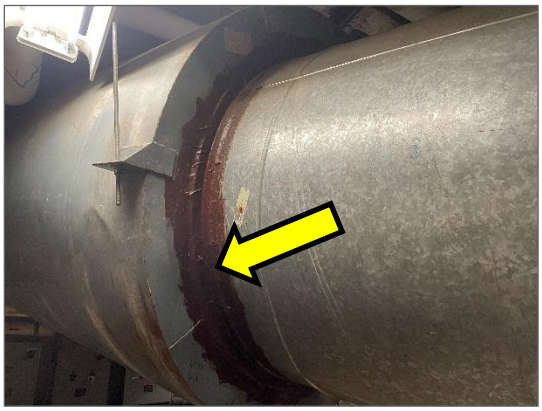


Photo 1

4.5.4 Mechanical Equipment Insulation

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

4.5.5 Acoustic Ceiling Tiles

Acoustic lay-in ceiling tiles (24” x 48” texture and pinhole) present in L Wing do not contain asbestos (samples 039a-c, lab reference no. b54896).

Remaining acoustic ceiling tiles are presumed to be non-asbestos based on the age of the materials determined from the date stamp or the age of the building renovation. The tiles were manufactured after asbestos stopped being used in acoustic ceiling tiles.

4.5.6 Drywall Joint Compound

Drywall joint compound present as a wall and ceiling finish throughout the L Wing does not contain asbestos (samples 041a-c and 042a-c, lab reference no. b54896). A trace amount of chrysotile asbestos (< 0.5%) was found in one of the samples (sample 041c). Ontario Regulation 278/05 defines an asbestos-containing material as one that contains at least 0.5% asbestos, therefore the drywall joint compound in this wing is considered non-asbestos. Additional sampling performed by ECOH in 2017 confirmed that the drywall joint compound is non-asbestos; refer to Appendix II in the Asbestos Analytical Results Report on the HMIS 2.0 online database.

4.5.7 Vinyl Sheet Flooring

Vinyl sheet flooring (green with dots pattern) present in the Offices (Location 1004) does not contain asbestos (samples S0001A-C, lab reference no. b250754).

Remaining sheet flooring present throughout L Wing is presumed to be non-asbestos based on the type of flooring (linoleum without paper backing layer). Mastic under sheet flooring is presumed to contain asbestos.

4.5.8 Vinyl Floor Tiles and Mastic

Vinyl floor tiles are present as follows:

Size, Colour/Pattern, Photo #	Sample Number, Lab ref no.	Asbestos Type (tile)	Asbestos Type (mastic)
12” x 12”, beige with brown fleck, photo 1	S0002A-C, b250754	Chrysotile	None detected
12” x 12”, white with grey lines	040a-c, b54896 2018-0014A-C, b195703	None detected	None detected
12” x 12”, green with white streaks	S0003A-C, b250754	None detected	None detected

Photo 1

4.6 40 Wing/M Wing

4.6.1 Pipe Insulation

Parging cement (photo 1), containing chrysotile asbestos (previously reported), is present on pipe fittings (elbows, valves, tees, hangers etc.) on the majority of insulated systems.

A white preformed block insulation (trade name Magnesia Block, photo 2), containing chrysotile asbestos (previously reported), is present on straight sections of steam system pipes throughout the Basement of the M Wing.

A white corrugated paper insulation (trade name Aircell, photo 3), containing chrysotile asbestos (previously reported), is present on straight sections of hot water heating system pipes throughout the Basement of the M Wing.

Sweatwrap insulation (brown layered paper) present on straight sections of pipes in the M Wing Basement does not contain asbestos (samples S0006A-C, lab reference no. b250890).

Remaining pipes are either uninsulated or insulated with non-asbestos fibreglass.

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

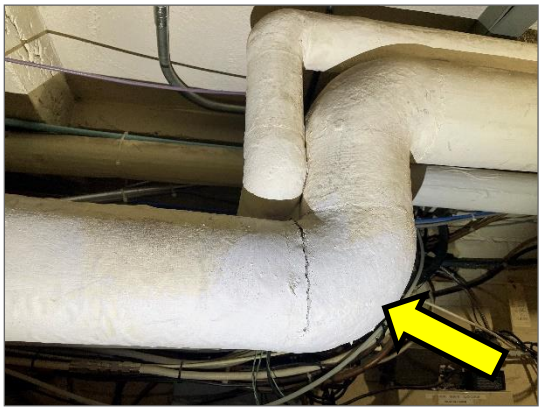


Photo 1

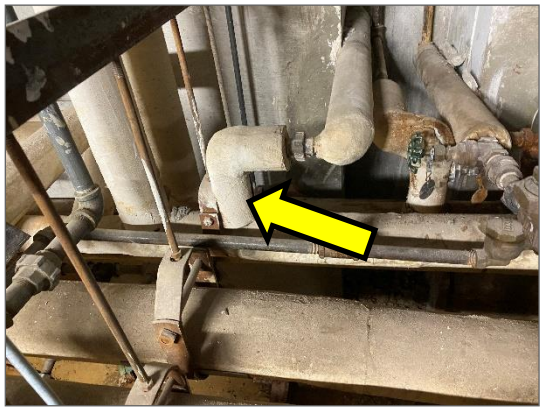


Photo 2

Photo 3

4.6.2 Duct Insulation

Ducts are either uninsulated or insulated with non-asbestos fibreglass.

4.6.3 Mechanical Equipment Insulation

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

4.6.4 Acoustic Ceiling Tiles

Acoustic lay-in ceiling tiles (24” x 24” large fissures and pinholes pattern, photo 1), containing chrysotile asbestos and a trace amount of amosite asbestos (<0.5%), are present throughout Level 1 (sample 053a, lab reference no. b54898).

Brown ceiling tile mastic (photo 2), containing chrysotile asbestos, is present above lay-in ceiling tiles throughout the M Wing (sampled by HHS in March 2013).

All remaining types of ceiling tiles are presumed to be non-asbestos based on the date of manufacture determined from the date stamp applied to the top of the tiles (1994-2000). The tiles were manufactured after asbestos stopped being used in acoustic ceiling tiles. Ceiling tiles were confirmed to be non-asbestos by sampling performed by ECOH in 2017, refer to Appendix II in the Asbestos Analytical Results Report on the HMIS 2.0 online database.

Photo 1

Photo 2

4.6.5 Plaster

Smooth plaster present on walls and ceilings throughout the M Wing does not contain asbestos (samples 050a-g, lab reference no. b54898). Additional sampling performed by ECOH in 2017 confirmed the plaster to be non-asbestos, refer to Appendix II in the Asbestos Analytical Results Report on the HMIS 2.0 online database.

Rough plaster present on ceilings throughout the M Wing Basement does not contain asbestos (samples 047a-g, lab reference no. b54897).

4.6.6 Drywall Joint Compound

Drywall (gypsum board) and drywall joint compound is present as a wall and ceiling finish throughout the M Wing. A total of nine samples of drywall joint compound were collected (samples S0002A-I, lab reference no. b250890) and it was found that one sample contained chrysotile asbestos. The asbestos-positive results indicate that at a minimum, a portion of drywall joint compound application contains asbestos, and all drywall joint compound is presumed to contain asbestos until further sampling can prove otherwise.

4.6.7 Asbestos Cement Products (Transite)

Transite board (photo 1), presumed to contain asbestos based on visual observation, is present as a ceiling panel in the Elevator Mechanical Room (Location 4).

Photo 1 (photo taken during previous assessment)

4.6.8 Vinyl Sheet Flooring

Vinyl sheet flooring is present as follows:

Colour, pattern	Sample Number, Lab Ref No.	Asbestos Type	Asbestos Type (Adhesive)
Brown pebble pattern	2018-0002A-C, b195703	None detected	None detected
Light purple pattern	S0004A-C, b250890	None detected	None detected

Remaining sheet flooring present throughout the M Wing is presumed to be non-asbestos based on the type of flooring (linoleum without paper backing layer). Mastic under non-asbestos sheet flooring is presumed to contain asbestos until further sampling can prove otherwise.

4.6.9 Vinyl Floor Tiles and Mastic

Vinyl floor tiles are present as follows:

Size, Colour/Pattern, Photo #	Sample Number, Lab ref no.	Asbestos Type (tile)	Asbestos Type (mastic)
12” x 12”, brown with thick brown lines, photo 1	048a, b54897	Chrysotile	Chrysotile
12” x 12”, white with brown lines, photo 2	051a, b54898	Chrysotile	None detected
9” x 9”, green with white flecks, photo 3	052a, b54898 2018-0001A, b195703	Chrysotile	Chrysotile
9” x 9”, brown flecks, photo 4	022a, b54893	Chrysotile	Chrysotile
9” x 9”, brown with brown and white lines	011a, b54892	Chrysotile	Chrysotile
12” x 12”, pink dense fleck	S0001A-C, b250890	None detected	None detected
12” x 12”, beige with brown fleck	S0003A-C, b250890	None detected	None detected

Photo 1

Photo 2

Photo 3

Photo 4

4.6.10 Other Building Materials

Fibrous board (photo 1), containing chrysotile asbestos (sample S0007A, lab reference no. b250890), is present within the Basement Storage Area (Location 5).

Gold mastic (photo 2), containing chrysotile asbestos (sample S0005A, lab reference no. b250890), is present as a sink undercoating throughout the M Wing.

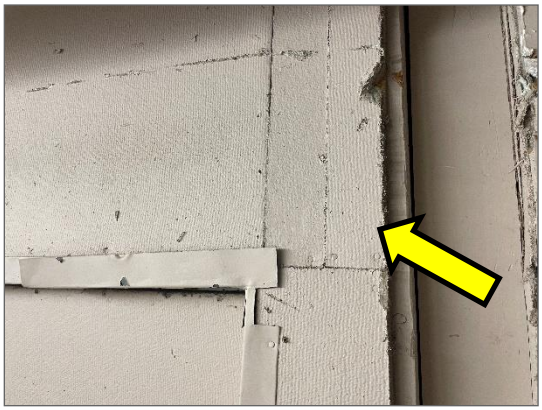


Photo 1

Photo 2

4.7 60 Wing/G Wing

4.7.1 Pipe Insulation

Parging cement (photo 1), containing chrysotile asbestos (previously sampled), is present on pipe fittings (elbows, valves, tees, hangers etc.) on hot water heating systems throughout the G Wing.

Black tar, containing chrysotile asbestos (samples 004a, lab reference b54891), is present over fibreglass insulation on drainpipe fittings throughout the G Wing.

Sweatwrap insulation (brown layered paper) present on straight sections of drain system pipes in the G Wing Basement does not contain asbestos (samples 005a-c, lab reference no. b54891).

Remaining pipes are either uninsulated or insulated with non-asbestos fibreglass.

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

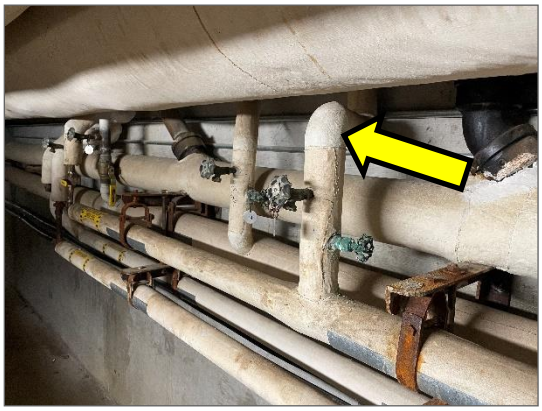


Photo 1

4.7.2 Duct Insulation

Ducts are either uninsulated or insulated with non-asbestos fibreglass.

4.7.3 Mechanical Equipment Insulation

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

4.7.4 Acoustic Ceiling Tiles

Ceiling tiles are presumed to be non-asbestos based on the date of manufacture determined from the date stamp applied to the top of the tiles (1994-2000) or the age of the materials determined from the age of the renovation (1994). The tiles were manufactured after asbestos stopped being used in acoustic ceiling tiles. The ceiling tiles were confirmed to be non-asbestos by sampling performed by ECOH in 2017; refer to Appendix II in the Asbestos Analytical Results Report on the HMIS 2.0 online database.

4.7.5 Plaster

Rough plaster (photo 1), containing chrysotile asbestos (ECOH samples 17429-JH-G0-04A), is present in the G Wing Stairwells.

Smooth plaster, containing a trace percentage of chrysotile asbestos (<0.5%), is present in plaster finishes within G Wing (samples 001a-g, lab reference no. b54891). This small concentration is less than

the regulatory limit of 0.5%, therefore the plaster is a non-asbestos material. Additional sampling performed by ECOH in 2017 confirmed the plaster to be non-asbestos, refer to Appendix II in the Asbestos Analytical Results Report on the HMIS 2.0 online database.

Photo 1

4.7.6 Drywall Joint Compound

Drywall joint compound present on wall and ceiling finishes throughout Level 0 does not contain asbestos (samples 010a-c, lab reference no. b54892).

Asbestos in drywall joint compound was banned in Canada in 1980. Drywall joint compound in Levels 1 and 2 was reported to be installed after 1986 (1980 plus a reasonable non-compliance period based on our experience) and is assumed to contain no asbestos.

Additional sampling performed by ECOH in 2017 confirmed the drywall joint compound to be non-asbestos; refer to Appendix II in the Asbestos Analytical Results Report on the HMIS 2.0 online database.

4.7.7 Vinyl Sheet Flooring

Vinyl sheet flooring (grey noise pattern, photo 1), presumed to contain asbestos, is present in the Level 0 Corridor (Location 4).

Remaining sheet flooring present throughout G Wing is presumed to be non-asbestos based on the type of flooring (linoleum without paper backing layer). Mastic present under non-asbestos sheet flooring is presumed to contain asbestos until further sampling can prove otherwise.

Photo 1

4.7.8 Vinyl Floor Tiles and Mastic

Vinyl floor tiles are present as follows:

Size, Colour/Pattern, Photo #	Sample Number, Lab ref no.	Asbestos Type (tile)	Asbestos Type (mastic)
9” x 9”, white with brown lines, photo 1	002a, b54891 2018-0003A-C, b195703	Chrysotile	None detected
12” x 12”, brown with dark brown flecks, photo 2	008a, b54892 2018-0005A-C, b195703	Chrysotile	None detected
12” x 12”, beige with brown lines, photo 3	009a, b54892	Chrysotile	None detected
9” x 9”, brown with brown and white lines, photo 4	011a, b54892 2018-0004A, b195703	Chrysotile	Chrysotile
12” x 12”, pink dense fleck	N/A	Presumed	Presumed

Photo 1

Photo 2

Photo 3 (photo taken during previous assessment)

Photo 4

4.8 89 Wing/O Wing

4.8.1 Pipe Insulation

Pipes are uninsulated.

4.8.2 Mechanical Equipment Insulation

Mechanical equipment is uninsulated.

4.9 90 Wing Core

4.9.1 Pipe Insulation

Parging cement (photo 1), containing chrysotile asbestos (previously sampled), is present on pipe fittings (elbows, valves, tees, hangers etc.) throughout the 90 Wing Core.

A white corrugated paper insulation (trade name Aircell), containing chrysotile asbestos (previously sampled), is present on straight sections of hot water heating system pipes.

Tar (photo 2), containing chrysotile asbestos (sample S0004A, b250891-B), is present over horsehair on pipe fittings (elbows, valves, tees, hangers etc.) throughout the 90 Wing Core.

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

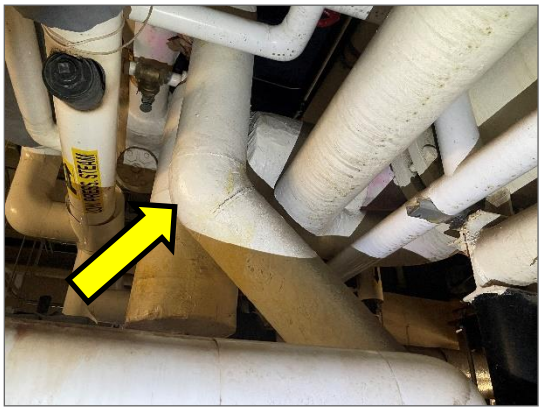


Photo 1

Photo 2

4.9.2 Duct Insulation

Parging cement (photo 1), containing chrysotile asbestos (sample 034a, lab reference no. b54895), is present over the fittings, edges, seams, and pins of fibreglass insulation on ducts in the Basement Mechanical Room (Location 1) and the Mechanical Penthouse (Location 6001).

Remaining ducts are either uninsulated or insulated with non-asbestos fibreglass.

Photo 1

4.9.3 Mechanical Equipment Insulation

Parging cement (photo 1), containing chrysotile asbestos (previously sampled), is present over fibreglass insulation on the condensate tank present within the Basement Mechanical Room (Location 1).

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

Photo 1

4.9.4 Acoustic Ceiling Tiles

Acoustic ceiling tiles (24” x 24”, lay-in with a deep pinhole pattern) present throughout the 90 Wing Core do not contain asbestos (samples S0007A-C, lab reference b258725).

Remaining acoustic ceiling tiles are presumed to be non-asbestos based on the date of manufacture determined from the date stamp applied to the top of the tiles (1994-2000). The tiles were manufactured after asbestos stopped being used in acoustic ceiling tiles.

4.9.5 Plaster

Rough plaster (photo 1) is present as ceiling finish within the Stairwell (Location 4). Sampling performed by ECOH in 2017 determined this plaster to contain chrysotile asbestos; refer to Appendix II in the Asbestos Analytical Results Report on the HMIS 2.0 online database.

Smooth plaster present on walls throughout the 90 Wing Core does not contain asbestos (samples S0001A-G, lab reference no. b260408).

Smooth plaster present on ceilings throughout the 90 Wing Core contains <0.5% chrysotile asbestos (samples S0005A-E, lab reference no. b258725). This small concentration is less than the regulatory limit of 0.5%, therefore the plaster is a non-asbestos material.

Photo 1

4.9.6 Drywall Joint Compound

Drywall joint compound present on wall and ceiling finishes in limited locations in the 90 Wing Core does not contain asbestos (samples S0006A-C, lab reference no. b258725).

Additional sampling performed by ECOH in 2017 confirmed the drywall joint compound to be non-asbestos; refer to Appendix II in the Asbestos Analytical Results Report on the HMIS 2.0 online database.

4.9.7 Vinyl Sheet Flooring

Residual vinyl sheet flooring with a brown pebble pattern present in the Storage Area (Location 2001) does not contain asbestos (samples S0002A-C, lab reference no. b250891-B).

Remaining sheet flooring present throughout the 90 Wing Core is presumed to be non-asbestos based on the type of flooring (linoleum without paper backing layer). Mastic present under non-asbestos sheet flooring is presumed to contain asbestos until further sampling can prove otherwise.

4.9.8 Other Building Materials

Paper heat shields (photo 1), containing chrysotile asbestos (sample S0003A, lab reference no. b250891-B), are present in light fixtures throughout the 90 Wing Core.

Photo 1

4.10 90 Wing N/E Wing

4.10.1 Pipe Insulation

Parging cement, containing chrysotile asbestos (previously sampled), is present on pipe fittings (elbows, valves, tees, hangers etc.) on the majority of insulated systems.

A white corrugated paper insulation (trade name Aircell), containing chrysotile asbestos (previously sampled), is present on straight sections of hot water heating system pipes.

Sweatwrap insulation (brown layered paper) present on straight sections of drainpipes throughout the building does not contain asbestos (samples 005a-c, lab reference no. b54891, and 004A-C, lab reference no. b180176).

Tar paper present on pipe systems throughout the Level 3 Corridor (Location 3001) does not contain asbestos (samples S0009A-C, lab ref no. 10023230).

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

4.10.2 Duct Insulation and Mastic

Parging cement, containing chrysotile asbestos (previously sampled), is present over the fittings, edges, seams, and pins of fibreglass insulation on ducts in the Service Tunnel (Location 1) and the Mechanical Penthouse (Location 6001).

Paper duct tape and paper present on ducts throughout Level 5 of the E Wing do not contain asbestos (samples S0003A-C and S0004A-C, lab reference no. 71993021).

Yellow and grey duct mastic present on ducts throughout Level 5 of the E Wing does not contain asbestos (samples S0005A-C and S0007A-C, lab reference no. 71993021).

Remaining ducts are either uninsulated or insulated with non-asbestos fibreglass.

4.10.3 Mechanical Equipment Insulation

Fibrous board (photo 1), containing chrysotile asbestos, is present on interior surfaces of radiator boxes throughout perimeter locations within Level 5 (S0002A, lab reference no. b250746). Fibrous board is presumed to be present in all perimeter radiators within the E Wing.

Tar paper and tar present on fibreboards inside radiators throughout E Wing does not contain asbestos (samples S0011A-C and S0012A-C, lab ref no. R7696143).

The remainder of mechanical equipment is either uninsulated or insulated with non-asbestos fibreglass.

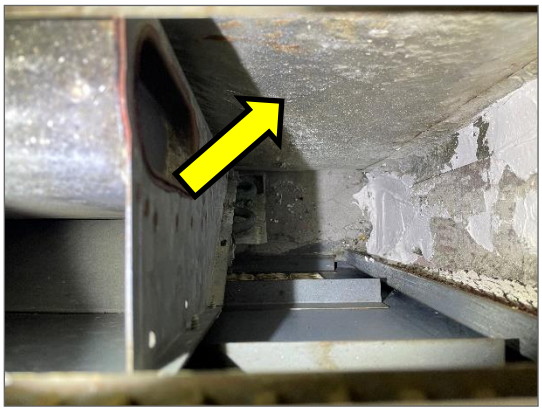


Photo 1

4.10.4 Acoustic Ceiling Tiles

Acoustic ceiling tiles are presumed to be non-asbestos based on the date of manufacture determined from the date stamp applied to the top of the tiles (1994-2000) and based on the nature of the material (fibreglass). The tiles were manufactured after asbestos stopped being used in acoustic ceiling tiles.

Additional sampling performed by ECOH in 2017 confirmed the ceiling tiles to be non-asbestos; refer to Appendix II in the Asbestos Analytical Results Report on the HMIS 2.0 online database.

4.10.5 Plaster

Rough plaster is present as the ceiling finish within the Stairwell (Location 2). Sampling performed by ECOH in 2017 determined this plaster to contain chrysotile asbestos; refer to Appendix II in the Asbestos Analytical Results Report on the HMIS 2.0 online database.

Smooth plaster is present on walls and ceilings throughout the E Wing. Sampling during the 2008 reassessment determined the plaster to be non-asbestos. Additional sampling performed by ECOH in

2017 confirmed the plaster to be non-asbestos; refer to Appendix II in the Asbestos Analytical Results Report on the HMIS 2.0 online database.

4.10.6 Drywall Joint Compound

Drywall joint compound present on wall and ceiling finishes in limited locations in the wing does not contain asbestos (samples 021a-c, lab reference no. b54893). Additional sampling performed by ECOH in 2017 confirmed the drywall joint compound to be non-asbestos; refer to Appendix II in the Asbestos Analytical Results Report on the HMIS 2.0 online database.

4.10.7 Vinyl Sheet Flooring

Vinyl sheet flooring with a taupe pebble pattern present in Storage (Location 3007) does not contain asbestos (samples S0001A-C, lab reference no. b250746).

Remaining sheet flooring present throughout the E Wing is presumed to be non-asbestos based on the type of flooring (linoleum without paper backing layer). Mastic present under non-asbestos sheet flooring is presumed to contain asbestos until further sampling can prove otherwise.

4.10.8 Vinyl Floor Tiles and Mastic

Vinyl floor tiles are present as follows:

Size, Colour/Pattern, Photo #	Sample Number, Lab ref no.	Asbestos Type (tile)	Asbestos Type (mastic)
9” x 9”, brown with thin brown lines, photo 1	007a, b54892 2018-0006A-C, b195703	Chrysotile	Non-asbestos. A trace amount of chrysotile asbestos (<0.5%) was detected
9” x 9”, green with black flecks, photo 2	019a, b54893 2018-0010A-C, b195703	Chrysotile	None detected
9” x 9”, white with blue lines, photo 3	020a, b54893	Chrysotile	None detected
9” x 9”, brown flecks	022a, b54893 2018-007A-C, b195703	Chrysotile	Non-asbestos. A trace amount of chrysotile asbestos (<0.5%) was detected
9” x 9”, black and green flecks, photo 4	035a, b54895	None detected	Chrysotile

Size, Colour/Pattern, Photo #	Sample Number, Lab ref no.	Asbestos Type (tile)	Asbestos Type (mastic)
	2018-0009A, b195703		
12” x 12”, brown/beige/blue/red with flecks, photo 5	2018-0008A-C, b195703	None detected	None detected
12” x 12”, beige with dense fleck	N/A	Presumed	Presumed

Photo 1

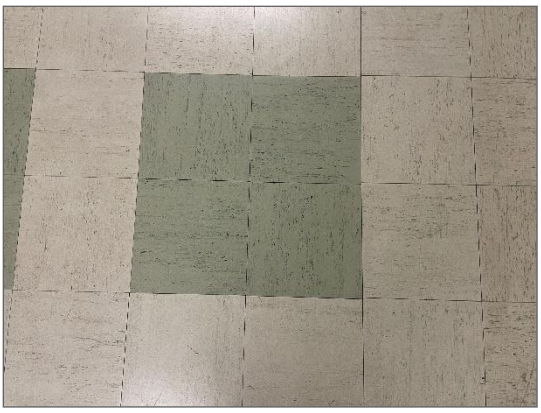


Photo 2

Photo 3

Photo 4

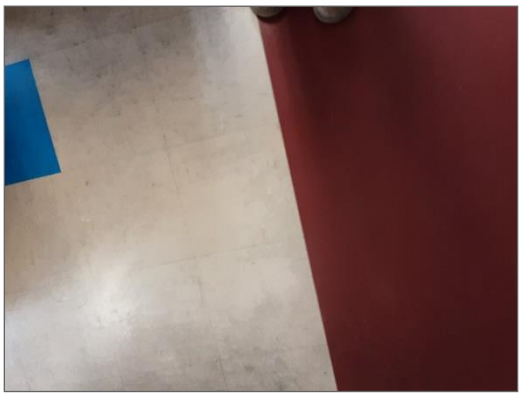


Photo 5

4.10.9 Other Building Materials

Paper heat shield, containing chrysotile asbestos (visually similar to sample S0004A, lab reference no. b250891-B), is present in a light fixture in the Corridor (Location 4001).

Thin-set present under ceramic tiles on walls throughout the E Wing does not contain asbestos (samples S0006A-C, lab reference no. 71993021).

Black mastic (photo 1), containing chrysotile asbestos (samples S0010A, lab reference no. 100232307), is present as a sink undercoating in the Level 3 Utility Room (Location 3008).

Photo 1

4.11 90 Wing S/F Wing

4.11.1 Pipe Insulation

Parging cement, containing chrysotile asbestos (previously sampled), is present on pipe fittings (elbows, valves, tees, hangers etc.) on the majority of insulated systems.

A white corrugated paper insulation (trade name Aircell), containing chrysotile asbestos (previously sampled), is present on straight sections of hot water heating system pipes.

Sweatwrap insulation (brown layered paper) present on straight sections of drain pipes throughout the building does not contain asbestos (samples 005a-c, lab reference no. b54891, and 004A-C, lab reference no. b180176).

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

4.11.2 Duct Insulation and Mastic

Parging cement, containing chrysotile asbestos (previously sampled), is present over the fittings, edges, seams and pins of fibreglass insulation on ducts in the Generator Area (Location 3) and the Mechanical Penthouse (Location 6001).

Red mastic (Photo 1), containing chrysotile asbestos, is present on ducts throughout the F Wing (sample S0004A, lab reference no. 71993019).

Remaining ducts are either uninsulated or insulated with non-asbestos fibreglass.

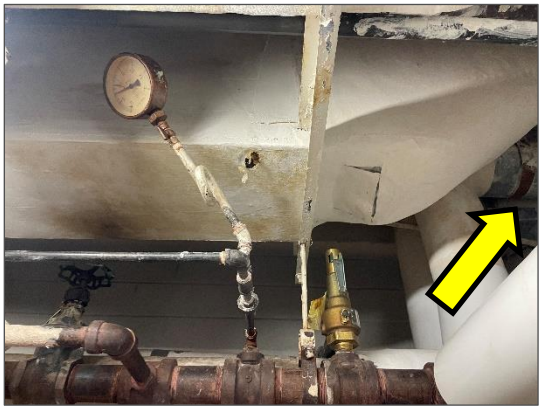


Photo 1

4.11.3 Mechanical Equipment Insulation

Fibrous board, containing chrysotile asbestos, is present on interior surfaces of radiator boxes throughout perimeter locations within Level 5 (visually similar to S0002A, lab reference no. b250746). Fibrous board is presumed to be present in all perimeter radiators within the F Wing.

Parging cement, containing chrysotile asbestos (previously sampled), is present over fibreglass insulation on the round exhaust from the diesel generator in the Generator Area (Location 3).

The remainder of mechanical equipment is either uninsulated or insulated with non-asbestos fibreglass.

4.11.4 Acoustic Ceiling Tiles

Acoustic ceiling tiles are presumed to be non-asbestos based on the date of manufacture determined from the date stamp applied to the top of the tiles (1994-2000) and based on the nature of the material (fibreglass). The tiles were manufactured after asbestos stopped being used in acoustic ceiling tiles.

Additional sampling performed by ECOH in 2017 confirmed the ceiling tiles to be non-asbestos; refer to Appendix II in the Asbestos Analytical Results Report on the HMIS 2.0 online database.

4.11.5 Plaster

Rough plaster is present as the ceiling finish within the Stairwell (Location 4). Sampling performed by ECOH in 2017 determined this plaster to contain chrysotile asbestos; refer to Appendix II in the Asbestos Analytical Results Report on the HMIS 2.0 online database.

Asbestos-containing smooth plaster was identified as a wall and ceiling finish in Level 0 of F Wing during an assessment conducted by Safetech Environmental Ltd. in January 2013. All plaster in this area should be considered asbestos-containing. Additional sampling of plaster performed by ECOH in 2017 confirmed the plaster to be asbestos-containing throughout the F Wing; refer to Appendix II in the Asbestos Analytical Results Report on the HMIS 2.0 online database.

4.11.6 Drywall Joint Compound

Drywall joint compound present on wall and ceiling finishes in limited locations in the wing does not contain asbestos (samples 021a-c, lab reference no. b54893). Additional sampling performed by ECOH in 2017 confirmed the drywall joint compound to be non-asbestos; refer to Appendix II in the Asbestos Analytical Results Report on the HMIS 2.0 online database.

4.11.7 Sheet Flooring

Sheet flooring present throughout the F Wing is presumed to be non-asbestos based on the type of flooring (linoleum without paper backing layer). Mastic present underneath non-asbestos sheet flooring is presumed to contain asbestos until further sampling can prove otherwise.

4.11.8 Vinyl Floor Tiles and Mastic

Vinyl floor tiles are present as follows:

Size, Colour/Pattern, Photo #	Sample Number, Lab ref no.	Asbestos Type (tile)	Asbestos Type (mastic)
9” x 9”, pink with red and white streaks, photo 1	S0002A, b250757	Chrysotile	Presumed
9” x 9”, brown with thin brown lines	007a, b54892 2018-0006A-C, b195703	Chrysotile	Non-asbestos. A trace amount of chrysotile asbestos (<0.5%) was detected
9” x 9”, green with black flecks	019a, b54893 2018-0010A-C, b195703	Chrysotile	None detected
9” x 9”, white with blue lines	020a, b54893	Chrysotile	None detected
9” x 9”, brown flecks	022a, b54893 2018-007A-C, b195703	Chrysotile	Non-asbestos. A trace amount of chrysotile asbestos (<0.5%) was detected

Photo 1

4.11.9 Other Building Materials

Bakelite (photo 1), containing chrysotile asbestos (samples 0001A-C, lab reference no. b188717), is present as bench tops, shelving, and back splashes in the Level 2 Laboratory (Location 2015).

Black mastic (photo 2), containing chrysotile asbestos (samples S0002A, lab reference no. 250757), is present as a sink undercoating in the Level 2 Laboratories (Locations 2001 and 2015).

White mastic present as a sink undercoating in the Level 3 Utility Room (Location 3020) does not contain asbestos (samples S0005A-C, lab reference no. 10023233).

Thin-set present under ceramic tiles on walls throughout the F Wing does not contain asbestos (samples S0003A-C, lab reference no. 71993019).

Photo 1

Photo 2

4.12 Poplar Avenue Parking Garage and Flat Lot

Pinchin performed a hazardous building materials assessment of the Poplar Avenue Parking Garage and Flat Lot. Refer to the report located on the HMIS 2.0 online database.

4.13 A Wing, B Wing, C Wing

Pinchin performed a hazardous building materials assessment of the A Wing, B Wing, and C Wing. Refer to the report located on the HMIS 2.0 online database.

4.14 Concession Street Parking Garage

Pinchin performed a hazardous building materials assessment of the Concession Street Parking Garage. Refer to the report located on the HMIS 2.0 online database.

5.0 RECOMMENDATIONS

5.1 General

Perform a detailed intrusive assessment prior to building renovation or demolition operations. The assessment should include; destructive testing (e.g. coring and/or removal of building finishes and

components), sampling of other hazardous materials (lead, mercury, PCBs, mould, etc.), and materials not tested in this study (e.g. roofing materials, caulking, mastics).

5.1.1 Excluded Asbestos Materials

Materials listed as exclusions in the previous reports remain as exclusions. Sampling, assessment or verification of excluded materials was not conducted.

The following is a list of materials which may contain asbestos, which were not observed and/or not sampled during the assessment; these materials are presumed contain asbestos until otherwise proven by sampling and analysis:

- Roofing felts and tar, mastics
- Floor levelling compound
- Ceramic tile setting compound
- Elevator and lift brakes
- Electrical components
- Refractory materials and insulations in boilers, incinerators, and stacks
- Insulation under metal clad boilers and vessels
- Mechanical packing, ropes, and gaskets
- Vermiculite
- Adhesives and duct mastics not sampled
- Caulking and putties
- Paper products
- Soffit and fascia boards
- Fire resistant doors
- Stucco, plaster or other cementitious parge coatings
- Vibration dampers on HVAC equipment
- Sealants on pipe threads
- Terrazzo

5.2 Remedial Work

Refer to the Remedial Recommendation Report in Appendix II for a list of any recommended remedial work.

5.3 On-going Management and Maintenance

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

Continue to apply the policies and procedures as outlined in the building's Asbestos Management Program (AMP).

Perform a reassessment of asbestos materials on an annual basis.

Remove asbestos-containing materials (ACM) prior to alteration or maintenance work if ACM may be disturbed by the work. Follow appropriate asbestos precautions for the classification of work being performed.

Update the asbestos inventory report for the building upon completion of any abatement of ACM.

6.0 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.

7.0 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. Ministry of the Environment Regulation, R.R.O. 1990 Reg. 347 as amended.

APPENDIX I

Methodology

1.0 GENERAL

Pinchin conducted an investigation of previously identified asbestos-containing materials (ACM) to evaluate the current condition of all accessible ACM identified in the most recent assessment.

The surveyor made reference to any existing assessment or abatement reports (as provided by the Client).

Materials listed as exclusions in the previous reports have remained as exclusions. Sampling, assessment or verification of excluded materials was not conducted.

Existing sampling data, where available, was reviewed and relied upon.

Where sampling was conducted, sample collection was conducted in accordance with our Standard Operating Procedures.

A separate set of samples was 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 were determined by visual examination and available information on the phases of construction and prior renovations.

Samples were collected at a rate that is in compliance with the requirements of local regulations and guidelines. The sampling strategy was 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 were visually identified without sample confirmation.

The asbestos analysis for select materials was completed using a stop-positive approach. Only one result meeting the regulated criteria was 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 stopped 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 were analyzed if no asbestos is detected. In some cases, all samples were analyzed in the sample set regardless of result.

The analysis was 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 were compared to the following criteria:

Jurisdiction	Friable	Non-Friable
Ontario	0.5%	0.5%

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. Additionally, these terms are used for materials which historically are known to not include asbestos in their manufacturing.

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)

For a complete description of the Evaluation Criteria and Basis of Recommendations, refer to Annex A.

Template: Methodology for Asbestos Reassessment, HAZ, January 16, 2024

METHODOLOGY ANNEX A EVALUATION CRITERIA

1.0 EVALUATION CRITERIA AND BASIS OF RECOMMENDATIONS

The detailed asbestos assessment provides information regarding the location, condition, accessibility and friability of the asbestos-containing materials (ACM). In order to make recommendations for compliance with current regulations, Pinchin developed the following criteria.

2.0 EVALUATION OF CONDITION

2.1 Friable Sprayed or Trowelled Fireproofing, Thermal Insulation and Texture Finishes (Surfacing Materials)

To evaluate the condition of ACM sprayed or trowelled on fireproofing, sprayed or trowelled thermal insulation (non-mechanical), or texture, decorative or acoustic finishes, the following criteria are applied:

Good	Surface of material shows no significant signs of damage, deterioration or delamination. Good condition includes unencapsulated or unpainted fireproofing or texture finishes, where no or limited delamination or damage is observed, or encapsulated fireproofing or texture finishes where the encapsulant or paint has been applied after the damage or fallout occurred.
Poor	A sprayed material that shows signs of significant damage or is significantly delaminating or deteriorating. This may be limited to surface delamination or some portion of the substrate may be exposed.

In Locations where damage exists in isolated areas, both good and poor condition may be applicable. The extent of each condition will be recorded. Fair condition is not utilized in the evaluation of ACM sprayed or trowelled fireproofing, sprayed or trowelled thermal insulation (non-mechanical), or texture, decorative or acoustic finishes.

The evaluation of the above products above ceilings may be limited by the number of observations and by building components such as ducts or full height walls that obstruct the above ceiling observations.

2.2 Friable Mechanical or Thermal System Insulation (TSI)

To evaluate the condition of mechanical insulation on vessels, boilers, breeching, ducts, pipes, fan units, equipment etc. the following criteria are applied:

Good	Insulation is completely covered in jacketing and exhibits no evidence of damage or deterioration. No insulation is exposed. Includes conditions where the jacketing has minor damage (i.e. scuffs or stains), but the jacketing is not penetrated.

Fair	Minor penetrating damage to jacketed insulation (cuts, tears, nicks, deterioration or delamination) or undamaged insulation that has never been jacketed. Insulation is exposed but not showing surface disintegration. The extent of missing insulation ranges from minor to none. Damage can be repaired.
Poor	Original insulation jacket is missing, damaged, deteriorated or delaminated. Insulation is exposed and significant areas have been dislodged. Damage cannot be readily repaired. Includes components where insulation may have been removed incompletely.

The evaluation of mechanical insulation may be limited by the number of observations made and building components such as ducts or full height walls that obstruct observations. It is often not possible to observe each foot of mechanical insulation from all angles.

2.3 Potentially Friable Materials and Miscellaneous Friable Materials

Potentially friable ACM are products that are basically non-friable while in place but have the potential to generate friable dust upon removal or if significantly disturbed without appropriate procedures. These products may become friable if damaged. Potentially friable materials include materials such as acoustic ceiling tiles and plaster. To evaluate the condition of potentially friable materials, the following criteria are applied:

Good	No significant damage or deterioration. Still serving its intended use as a building material or finish.
Fair	Showing signs of some cracking or breakage, but is not deteriorating (e.g. cracked plaster, broken but in place ceiling tile, missing tile or section of plaster etc.). The condition is such that it is still serving its intended use as a building material or finish but may require repair for mainly cosmetic purposes.
Poor	Significant deterioration or breaking apart of the material. Material has deteriorated to the point it is not serving its intended use as building material or finish. Material has deteriorated to a point it has become friable. Normally potentially friable ACM in Poor condition is not repairable and requires at least localized removal and replacement.

2.4 Non-Friable Materials

Non-friable ACM cover a wide range of products with a wide variation in their tendency to release dust or asbestos fibres to the air. Many of these materials, (particularly where the matrix is an unweathered bitumen, asphalt or tar material) do not release fibres except in very unusual circumstances or during significant disturbance (e.g. use of abrasive power tools). Others with a cementitious matrix (asbestos-cement products) can more readily release dust due to abrasion, demolition, weathering, etc. The

potential for asbestos release from non-friable ACM is always lower than from friable ACM. To evaluate the condition of non-friable Materials, the following criteria are applied:

Good	No significant damage or deterioration. Still serving its intended use as a building material or finish.
Fair	Showing signs of some cracking or breakage but is not deteriorating (e.g. cracked vinyl floor tile, missing piece of tile or transite, etc.). The condition is such that it is still serving its intended use as a building material or finish but may require repair for mainly cosmetic purposes.
Poor	Significant deterioration or breaking apart of the material to the point at which it cannot be repaired, and it will require at least local removal. Material has deteriorated to the point it is not serving its intended use as building material or finish. Material may have deteriorated to a point where traffic or disturbance may cause it to become friable.

2.5 Evaluation of ACM Debris

The identification of the exact location or presence of debris on the top of ceiling tiles is limited by the number of observations made and the presence of building components such as ducts or full height walls that obstruct observations.

The presence of fallen or dislodged ACM is noted separately from the ACM source and is referred to as Debris. Debris may be friable if from a friable ACM source or a badly deteriorated non-friable ACM source. Debris may also be non-friable (such as fallen pieces of transite sheet or mastic fittings, or broken, dislodged floor tiles).

Debris	Debris may be friable or non-friable but is always identified as “debris” as the component of an observation and quantified as Poor condition.

2.6 Evaluation of Presumed Asbestos-Containing Material (PACM)

Presumed asbestos-containing materials (PACM), are building materials that may contain asbestos but were not sampled or analyzed due to inaccessibility or the need to perform destructive testing to obtain a reasonable sample set. Evaluation of these materials is based on the assumption that these PACM are asbestos-containing.

A list of PACM is provided in the report and they are generally not included in the detailed room by room reports. Typically, they are excluded because they are inaccessible or present in very small quantities. If PACM are evaluated, Pinchin uses the criteria that correspond with the type (and friability) of the material listed above.

3.0 EVALUATION OF ACCESSIBILITY

The accessibility of building materials known or suspected of being ACM is rated according to the following criteria:

Access (A)	Common areas of the building within reach of all building users (approximately 8 ’- 9’ from floor or standard ceiling height). Includes other areas where occupant activities may result in disturbance of material that is not normally within reach from floor level, but may be disturbed by common activities (e.g. gymnasiums, workshops, warehouses.)
Access (B)	Areas of the building accessed primarily by Maintenance/Caretaking/Janitorial Staff and within reach without use of a ladder. Includes areas within reach in Boiler Rooms, Electrical Rooms, Janitors Closets, Elevator Rooms, Mechanical Rooms, etc. Includes materials within reach from fixed ladders or catwalks, mezzanines, and accessible pipe chases.
Access (C) and Visible	Areas of the building above 8' - 9’ where use of a ladder or scaffold is required to reach the ACM. Only includes ACM that are visible to view without the removal or opening of other building components such as ceiling tiles or service access panels.
Access (C) and not Visible / Limited Visibility	Areas of the building above 8' - 9’ where use of a ladder or scaffold is required to reach the ACM. Includes ACM that are not visible or partially visible to view and require the removal of a building component to see, such as ceilings tiles or access panels to view and access. Includes rarely entered crawl spaces, attic spaces, etc. Observations will be limited to the extent visible from the access points.
Access (D)	Areas of the building behind inaccessible solid ceiling systems, walls or equipment etc. where demolition of the ceiling, wall or equipment etc. is required to reach the ACM. Material inaccessible due to height or location or is only accessed under unusual situations. Evaluation of condition and extent of ACM is limited or impossible, depending on the surveyor's ability to visually examine materials in Access D.

4.0 ACTION MATRIX AND DEFINITIONS

Pinchin’s evaluation of the viability of a specific asbestos control option is based on the consideration of the friability, condition, accessibility and visibility of a material. The logic used is that damaged ACM located in an area frequently accessed by all building occupants is of a higher priority than damaged ACM located in an infrequently accessed service area. The action matrix considers the potential for fibre release (primarily from friable ACM) and the possible concerns from regulatory bodies and many building occupants to all damaged ACM (including non-friable).

In any building with asbestos, many current regulations require an Asbestos Management Program be implemented. Depending on the condition and the accessibility, more active measures such as repair or removal may be recommended. The following matrix provides guidance for recommended Actions in the absence of renovation or demolition. In the event of construction or maintenance activity which will disturb ACM more aggressive control or removal will be required.

4.1 Action Matrix

The following tables outline the action decisions based on the relationship of assessed factors. Table I applies to friable ACM. Table II applies to non-friable ACM.

Table I Decision Matrix for Friable ACM

	Condition			
Access	**Good**	**Fair**	**Poor**	**Debris**
(A)	Action 5[1]	Action 5[2]	Action 3	Action 1
(B)	Action 7	Action 6[3]	Action 3	Action 1
(C) Visible	Action 7	Action 6	Action 3	Action 2
(C) Not Visible / Limited Visibility	Action 7	Action 7	Action 4	Action 2
(D)	Action 7	Action 7	Action 7	Action 7

Table II Decision Matrix for Potentially Friable and Non-Friable ACM

	Condition			
Access	**Good**	**Fair**	**Poor**	**Debris**
(A)	Action 7	Action 7[4]	Action 3	Action 1
(B)	Action 7	Action 7	Action 3	Action 1
(C) Visible	Action 7	Action 7	Action 4	Action 2
(C) Not Visible / Limited Visibility	Action 7	Action 7	Action 4	Action 2
(D)	Action 7	Action 7	Action 7	Action 7

[1] If friable ACM in access (A)/Good condition is not proactively removed Action 7 (Manage) is recommended.
[2] If friable ACM in access (A)/Fair condition is not proactively removed repair is recommended.
[3] If friable ACM in access (B)/Fair condition is likely to be disturbed after repair proactive removal is recommended.
[4] Action 7 is recommended for all non-friable ACM in Fair condition however some clients may wish to repair or take some action primarily for cosmetic reasons

4.2 Action Definitions

The following are the definitions in the Action Matrix Table presented above:

Action Definitions	
Action 1	Clean-Up of ACM Debris Restrict access that is likely to cause a disturbance of the ACM Debris and clean up ACM Debris. Utilize appropriate asbestos precautions.
Action 2	Precautions for Access Which may Disturb ACM Debris Use appropriate means to isolate the debris or to limit entry to the area which may disturb the material. At locations where ACM Debris can remain in place in lieu of removal or clean-up (e.g. Debris on top of ceiling tiles or behind lockable door), Utilize appropriate asbestos precautions to enter the area if this will disturb debris. The precautions will be required until the ACM Debris has been cleaned up.
Action 3	ACM Removal Remove ACM. Utilize asbestos procedures appropriate to the scope of the removal work. Until it is removed, restrict access to the material so it is not disturbed.
Action 4	Precautions for Work Which may Disturb ACM in Poor Condition. Utilize appropriate asbestos precautions if ACM may be disturbed by work on or near ACM. This does not require restricting access to the area, only control of work which may contact or disturb the ACM. Removal is the only viable option if work will disturb ACM.
Action 5	Proactive ACM Removal Remove friable ACM where the presence of friable asbestos in Good condition is not desirable. If friable ACM in Fair condition is not removed, then Repair friable ACM.
Action 6	ACM Repair Repair friable ACM in Fair condition which is not likely to be damaged again or disturbed by normal use of the area or room. Pinchin recommends proactive removal if friable ACM is likely to be damaged or disturbed during normal use of the area or room.
Action 7	Asbestos Management Program with Routine Surveillance Implement an Asbestos Management Program, including routine surveillance of ACM. Reassess materials regularly (typically once per year).

Master Template: Methodology Annex A to Appendix I Evaluation Criteria, HAZ, April 3, 2024

APPENDIX II

Remedial Recommendations Report

HMIS
HAZARDOUS MATERIALS INVENTORY SYSTEM

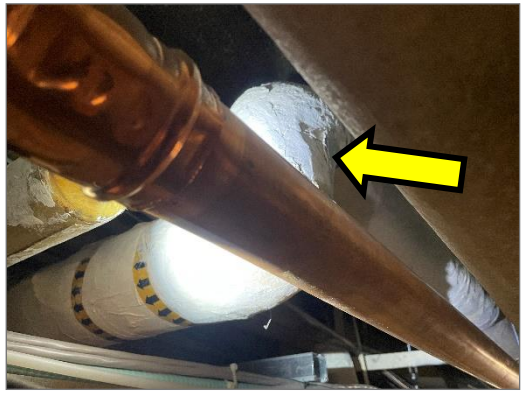
REMEDIAL RECOMMENDATION REPORT

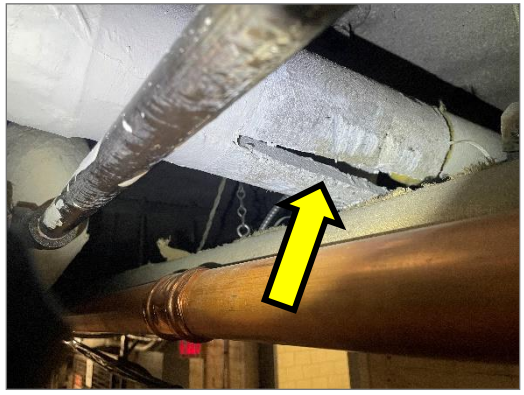
PINCHIN
1.855.PINCHIN www.pinchin.com

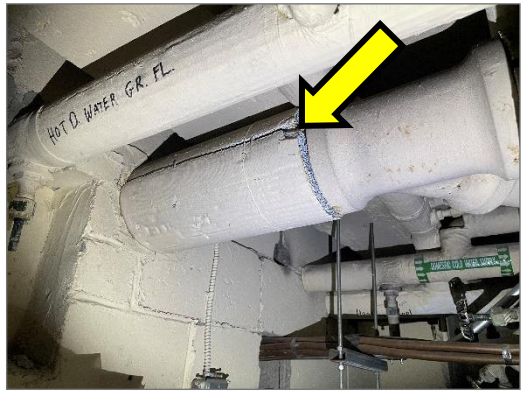
Client: Hamilton Health Sciences | **Site: 711 Concession Street, Hamilton, ON** | **Building Name: 40 Wing/M Wing** | **Surveyor:** | **Survey Date: 2024-11-26**

Location #: 1 | **Location Name: Service Tunnel** | **Floor: B** | **Room #:** | **Square ft: 5281**

ASBESTOS											
System	Component	Material	Friable	Item	Covering	Access	Visible	Fair	Poor	Unit	Recommended Procedure
Piping		Parging Cement, UNJACKETED	F	Fitting		C	Y	1 (6)	()	EA	Type 2/ Repair
Piping		Aircell	F	Insulation		C	Y	1 (6)	()	LF	Type 2/ Repair
Piping		Aircell	F	Insulation		C	Y	5 (6)	()	LF	Type 2/ Repair







Client: Hamilton Health Sciences | **Site: 711 Concession Street, Hamilton, ON** | **Building Name: 40 Wing/M Wing** | **Surveyor:** | **Survey Date: 2024-11-26**

Location #: 3 | **Location Name: Service Tunnel** | **Floor: B** | **Room #:** | **Square ft: 1230**

ASBESTOS											
System	**Component**	**Material**	**Friable**	**Item**	**Covering**	**Access**	**Visible**	**Fair**	**Poor**	**Unit**	**Recommended Procedure**
Piping		Parging Cement	F	Fitting		C	Y	()	1 (3)	%	Type 2 Glove/bag
Piping	Hot Water Heating	Aircell	F			C	Y	1 (6)	()	%	Type 2/ Repair

Client: Hamilton Health Sciences | **Site: 711 Concession Street, Hamilton, ON** | **Building Name: 40 Wing/M Wing** | **Surveyor:** | **Survey Date: 2024-11-26**

Location #: 5 | **Location Name: Storage Room** | **Floor: B** | **Room #:** | **Square ft: 517**

ASBESTOS											
System	**Component**	**Material**	**Friable**	**Item**	**Covering**	**Access**	**Visible**	**Fair**	**Poor**	**Unit**	**Recommended Procedure**
Wall		Drywall and joint compound	NF			B	Y	()	1 (3)	%	Type 1/ Removal/Repair

Client: Hamilton Health Sciences | **Site: 711 Concession Street, Hamilton, ON** | **Building Name: 40 Wing/M Wing** | **Surveyor:** | **Survey Date: 2024-11-26**
Location #: 6 | **Location Name: Storage Area** | **Floor: B** | **Room #:** | **Square ft: 1000**

ASBESTOS											
System	Component	Material	Friable	Item	Covering	Access	Visible	Fair	Poor	Unit	Recommended Procedure
Piping	Hot Water Heating	Aircell	F			C	Y	1 (6)	()	SF	Type 2/ Repair

Client: Hamilton Health Sciences | **Site: 711 Concession Street, Hamilton, ON** | **Building Name: 40 Wing/M Wing** | **Surveyor:** | **Survey Date: 2024-11-26**
Location #: 8 | **Location Name: Unknown** | **Floor: B** | **Room #:** | **Square ft: 56**

ASBESTOS											
System	Component	Material	Friable	Item	Covering	Access	Visible	Fair	Poor	Unit	Recommended Procedure
Piping		Aircell	F	Insulation		C	Y	1 (6)	()	LF	Type 2/ Repair

Client: Hamilton Health Sciences | **Site: 711 Concession Street, Hamilton, ON** | **Building Name: 40 Wing/M Wing** | **Surveyor:** | **Survey Date: 2024-11-26**
Location #: 9 | **Location Name: Maintenance** | **Floor: B** | **Room #:** | **Square ft: 1035**

ASBESTOS											
System	Component	Material	Friable	Item	Covering	Access	Visible	Fair	Poor	Unit	Recommended Procedure
Piping	Steam Supply	Magnesia block	F			C	Y	1 (6)	()	SF	Type 2 Repair
Piping		Aircell	F	Insulation		C	Y	1 (6)	()	SF	Type 2/ Repair

Client: Hamilton Health Sciences | **Site: 711 Concession Street, Hamilton, ON** | **Building Name: 40 Wing/M Wing** | **Surveyor:** | **Survey Date: 2024-11-26**

Location #: 24 | **Location Name: Mechanical Room** | **Floor: 0** | **Room #:** | **Square ft: 104**

ASBESTOS											
System	**Component**	**Material**	**Friable**	**Item**	**Covering**	**Access**	**Visible**	**Fair**	**Poor**	**Unit**	**Recommended Procedure**
Floor		Vinyl Floor Tile and Mastic, 9 X 9 BROWN FLECKS	NF			B	Y	()	1 (3)	SF	Type 1 Removal

Client: Hamilton Health Sciences | **Site: 711 Concession Street, Hamilton, ON** | **Building Name: 60 Wing/G Wing** | **Surveyor:** | **Survey Date: 2024-11-27**

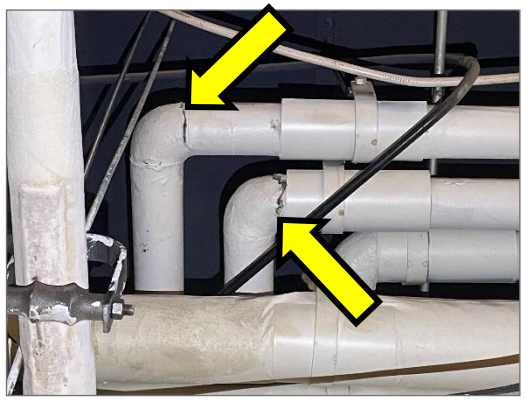
Location #: 7 | **Location Name: Stairwell, Phase: A** | **Floor: Basement (0)** | **Room #:** | **Square ft: 441**

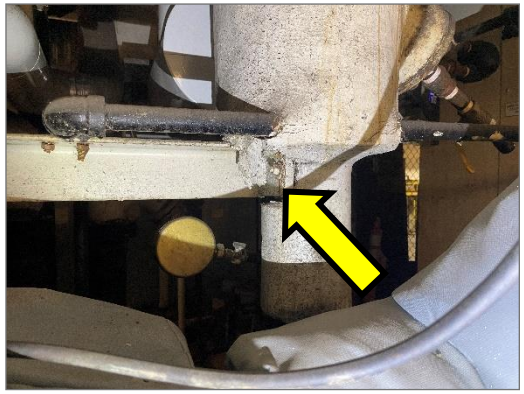
ASBESTOS											
System	Component	Material	Friable	Item	Covering	Access	Visible	Fair	Poor	Unit	Recommended Procedure
Ceiling		Plaster, ROUGH	PF			C	Y	()	3 (4)	SF	Type 2

Client: Hamilton Health Sciences | **Site: 711 Concession Street, Hamilton, ON** | **Building Name: 90 Wing Core** | **Surveyor:** | **Survey Date: 2024-11-27**

Location #: 1 | **Location Name: Mechanical Room** | **Floor: B** | **Room #:** | **Square ft: 8564**

ASBESTOS											
System	Component	Material	Friable	Item	Covering	Access	Visible	Fair	Poor	Unit	Recommended Procedure
Piping		Parging Cement	F	Fitting		C	Y	2 (6)	1 (3)	EA	Type 2 Repair/ Glove/bag Removal





Legend:

Sample number	
S####	Asbestos sample collected
V####	Material visually similar to numbered sample collected
V0000	Known non-asbestos material
V9000	Visually identified as an asbestos material
V9500	Material is presumed to be an asbestos material

Units	
SF	Square feet
LF	Linear feet
EA	Each
%	Percentage

Other	
A	Access
V	Visible
AP	Air Plenum
F	Friable material
NF	Non Friable material
PF	Potentially Friable material

Access	
A	Accessible to all building occupants
B	Accessible to maintenance and operations staff without a ladder
C	Accessible to maintenance and operations staff with a ladder. Also rarely entered, locked areas
D	Not normally accessible

Condition	
Good	No visible damage or deterioration
Fair	Minor, repairable damage, cracking, delamination or deterioration
Poor	Irreparable damage or deterioration with exposed and missing material

Visible	
Y	The material is visible when standing on the floor of the room, without the removal or opening of other building components (e.g. ceiling tiles or access panels).
N	The material is not visible to view when standing on the floor of the room and requires the removal of a building component (e.g. ceilings tiles or access panels) to view and access. Includes rarely entered crawlspaces, attic spaces, etc. Observations will be limited to the extent visible from the access points.
L	The material is partially visible to view when standing on the floor of the room and requires the removal of a building component (e.g. ceiling system or access panels) to view completely and access. Includes partially viewed access points to crawlspaces, attic spaces, etc. without entering. Observations are limited to the extent visible from the access points.

Air Plenum	
Yes or No	The material is in a return air plenum or in a direct airstream or there is evidence of air erosion (e.g. duct for heating or cooling blowing directly on or across an ACM). This field is only completed where Air Plenum consideration is required by regulation.

Colour Coding	
	The material is a hazardous material, either by analytical results or by visible identification.
	The material is presumed to be a hazardous material, based on visual appearance, and was not sampled due to limited access or the non-destructive nature of sampling.

Action

(1)	**Clean up of ACM Debris**	**(2)**	**Precautions for Access Which may Disturb ACM Debris**	**(3)**	**ACM removal**
(4)	**Precautions for Work Which may Disturb ACM in Poor Condition**	**(5)**	**Proactive ACM removal (Minimum repair required for fair condition)**	**(6)**	**ACM repair**
(7)	**Management program and surveillance**				