


DESIGNATED SUBSTANCES AND HAZARDOUS BUILDING MATERIALS ASSESSMENT REPORT

**Door Upgrade Project (Buildings A, B, D, E, F, G)
Seneca College's Newnham Campus
1750 Finch Avenue East
North York, Ontario
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Safetech Project Number: 3210562

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EXECUTIVE SUMMARY

Safetech Environmental Limited (Safetech) was commissioned by Seneca College to conduct a designated substances and hazardous materials assessment within Seneca College's Newnham Campus located at 1750 Finch Avenue East, North York, Ontario.

The objective of the assessment was to determine the presence, location, condition and quantities of designated substances and other hazardous materials that have the potential to be disturbed as part of planned construction activities (i.e. Door Upgrade Project (Buildings A, B, D, E, F, G)) so that appropriate control measures can be implemented to protect workers during the work.

A summary of the assessment results and general recommendations based on our findings are provided in the following table. This table should be considered a summary only. Please refer to the Results (Section 2.0), Conclusions and Recommendations (Section 3.0), Summary of ACM Occurrences (Appendix A) and Site Drawings (Appendix B) of our report for additional details.

Table 1: Summary of Hazardous Materials and Designated Substances

Designated Substance	Findings	Recommendations
Asbestos	<p>The following building materials are suspected to be asbestos-containing:</p> <ul style="list-style-type: none"> -Texture Coat on Ceiling Canopy (Door#9, Building D) 	<p>Disturbance of asbestos-containing materials must be conducted in accordance with Ontario Regulation 278/05 <i>Designated Substance – Asbestos on Construction Projects and in Building and Repair Operations</i>. Refer to Table (Results of Assessment for Asbestos-Containing Materials), Section 3.1.1 (Conclusions and Recommendations), Appendix A (Summary of ACM Occurrences) and Appendix B (Site Drawings). Asbestos-containing waste must be disposed of in accordance with R.R.O. 1990, Regulation 347, <i>General - Waste Management</i>.</p>

Lead	White, Red and Dark Grey paint was confirmed to be a low-level lead-containing paint ($\leq 0.1\%$ lead content).	Disturbance of lead-containing materials must be conducted in accordance with the Ontario Ministry of Labour <i>Lead on Construction Projects</i> guideline (2011) and/or the Environmental Abatement Council of Ontario (EACO) <i>Lead Guideline</i> (October 2014). For additional details, refer to Section 2.1.2 (Results) and Section 3.1.2 (Conclusions and Recommendations). Lead-containing wastes should be recycled if practicable or handled and disposed of according to R.R.O. 1990, Regulation 347, <i>General- Waste Management</i> .
	<p>The following materials are assumed to be lead-containing:</p> <ul style="list-style-type: none"> - glazing associated with ceramic tiles - solder in electrical components 	
Mercury	<p>Sources of mercury were observed in the subject area and include the following:</p> <ul style="list-style-type: none"> - liquid in thermostats 	Mercury-containing equipment is not expected to be impacted during the construction project.
Silica	<p>Building materials identified that are suspected to contain crystalline silica and may be disturbed as part of the planned construction project include:</p> <ul style="list-style-type: none"> - drywall walls/drywall joint compound - concrete - mortar 	Any work involving the disturbance of silica-containing materials should follow the procedures outlined in the Ontario Ministry of Labour " <i>Silica on Construction Projects</i> " guideline. For additional information, refer to Section 2.1.4 (Results) and Section 3.1.4 (Conclusions and Recommendations).
Other Designated Substances	No other designated substances are expected to be present in any significant quantities or in a form that would represent an exposure concern.	No protective measures or procedures specific to acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride are considered necessary.
Other Hazardous Materials	Findings	Recommendations
Urea Formaldehyde Foam Insulation	No UFFI was identified or is suspected in the subject area.	No action required.
Mould Contamination	No suspect mould contamination was observed on building finishes in the subject area.	No action required.
Pest Infestation	No pest infestations were observed in the areas assessed.	No action required.
Polychlorinated Biphenyls	No PCB containing light ballasts were observed within the areas assessed.	No action required.
Ozone Depleting and Global Warming Substances	No equipment was observed that is suspected to contain ozone depleting and/or global warming substances	No action required.

This assessment satisfies the Owner's requirements under Section 30 of the Ontario Occupational Health and Safety Act (OHSA), Revised Statutes of Ontario 1990, as amended.

Should you have any questions regarding the information contained in the report, please contact our office.

Safetech Environmental Limited

A handwritten signature in black ink, appearing to read 'Yash Panchal'.

Yash Panchal, B. Eng, EIT
Occupational Health and Safety Technician

August 10, 2021

Seneca College
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Attention: Ms. Julie Fallico, B.I.D, PMP, NCIDQ, LEED Green Associate
Project Manager, Capital Projects & Campus Planning

RE: Designated Substances and Hazardous Materials Assessment
Door Upgrade Project (Buildings A, B, D, E, F, G)
Seneca College's Newnham Campus
1750 Finch Avenue East, North York, Ontario

1.0 INTRODUCTION

1.1 Background and Objectives

Safetech Environmental Limited (Safetech) was commissioned by Seneca College to conduct a designated substances and hazardous materials assessment within Seneca College's Newnham Campus located at 1750 Finch Avenue East, North York, Ontario (subject building). The objective of the assessment was to determine the presence, location, condition and quantities of designated substances and other hazardous materials in the subject building that have the potential to be disturbed as part of planned construction activities (i.e. Door Upgrade Project (Buildings A, B, D, E, F, G)) so that appropriate control measures can be implemented to protect workers during the work.

This assessment satisfies the Owner's requirements under Section 30 of the Ontario Occupational Health and Safety Act (OHSA), Revised Statutes of Ontario 1990, as amended. Section 30(1) requires a building owner to determine if there are any designated substances present at a project site prior to construction or demolition activities. Sections 30(2), (3) and (4) require the Owner and constructors for a project to provide the findings in this report as part of the tendering information for any tendered project or to prospective contractors (and subcontractors) of a project before entering into a binding contract.

This report documents findings of our on-site inspection that was conducted on July 22, 2021 and provides conclusions and recommendations based on our findings and knowledge of the planned construction project.

1.2 Scope of Work

In accordance with our fee proposal document, our scope of work included the following activities:

- A review of existing documents, including renovation documents and drawings, floor plans and existing environmental assessment reports, etc., where available;
- A visual assessment of accessible area(s) in the subject building to identify the presence, location, condition and quantities of designated substances and other hazardous materials;
- Collection, analysis and interpretation of representative bulk samples of suspect asbestos-containing building materials for the determination of asbestos content and material classification;
- Collection, analysis and interpretation of representative paint chip samples for the determination of lead content; and
- Preparation of a report to document findings and provide recommendations regarding control measures and/or special handling procedures for designated substances or specific hazardous materials that may be disturbed as part of planned construction activities.

Documents reviewed to aid in the assessment included the following:

- Floor Plans for Seneca College's Newnham Campus *Door Upgrades Project (Buildings A, B, D, E, F, G)* dated *February 2021*.

This assessment only identified designated substances and hazardous materials that were deemed to be part of the building or somehow otherwise incorporated into the building structure and its finishes. **The following items were not included in our scope of work:**

- Assessing occupant items such as stored products, furnishings, items and materials used or produced as part of a manufacturing process;
- Investigating underground materials or equipment (vessels, drums, underground storage tanks, duct-banks, pipes, or cables);
- Assessing enclosed wall or ceiling cavities; and
- Assessing risers, pipe chases or elevator shafts.

1.3 Description of Area(s) Assessed

The area(s) investigated included all accessible locations of the subject building. The extent of the area investigated is indicated on the floor plan(s) provided in Appendix B. Please note the following areas were not accessible during the assessment:

- Exterior ceiling canopy adjacent Door#9 of Building D (Inaccessible due to higher elevation).

2.0 RESULTS

Results of our visual assessment and bulk sample analytical findings are summarized in the sections below.

2.1 Designated Substances

2.1.1 Asbestos

Results of bulk sample analysis for the determination of asbestos content are summarized in the following table. Materials have been classified as “ACM”, “Non-ACM”, “Suspected ACM” or “Presumed Non-ACM” based on analytical results. Materials classified as Suspected ACM or Presumed Non-ACM may require further analysis (depending on site-specific conditions) to verify whether the material should be classified as ACM or Non-ACM. Please refer to the Limitations section of this report (Section 4.0) for additional details. The Laboratory Certificate of Analysis is included in Appendix C.

Table 2: Bulk Sample Analytical Results for Determination of Asbestos Content

Sample No.	Material Description	Sample Location	Asbestos Content	Material Classification
1A	Exterior Door Frame Caulking	Door#1	None Detected	Non-ACM
1B		Door#4		
1C		Door#14		
2A	1.5'x1.5' Grey Vinyl Floor Tiles with White and Black Flecks – Floor Tile	Doors #1, 2&3	None Detected	Non-ACM
2A	1.5'x1.5' Grey Vinyl Floor Tiles with White and Black Flecks – Mastic			
2B	1.5'x1.5' Grey Vinyl Floor Tiles with White and Black Flecks – Floor Tile			
2B	1.5'x1.5' Grey Vinyl Floor Tiles with White and Black Flecks – Mastic			
2C	1.5'x1.5' Grey Vinyl Floor Tiles with White and Black Flecks – Floor Tile			
2C	1.5'x1.5' Grey Vinyl Floor Tiles with White and Black Flecks – Mastic			

Sample No.	Material Description	Sample Location	Asbestos Content	Material Classification
3A	Drywall Joint Compound (Drywall wall finishes)	Door#1	None Detected	Non-ACM
3B		Door#2		
3C		Door#3		
3D		Door#4		
3E		Door#6		
4A	Vinyl Floor Sheeting Dark Grey – Sheet Flooring	Door#6	None Detected	Non-ACM
4A	Vinyl Floor Sheeting Dark Grey – Mastic			
4B	Vinyl Floor Sheeting Dark Grey – Sheet Flooring			
4B	Vinyl Floor Sheeting Dark Grey – Mastic			
4C	Vinyl Floor Sheeting Dark Grey – Sheet Flooring			
5A	Vinyl Floor Sheeting Yellow	Door#7	None Detected	Non-ACM
5B				
5C				
6A	Texture Coat on wall	Door#8	None Detected	Non-ACM
6B				
6C				
7A	1'x1' Vinyl Floor Tiles Grey with White and dark grey flecks – Floor Tile	Door#17	None Detected	Non-ACM
7A	1'x1' Vinyl Floor Tiles Grey with White and dark grey flecks – Mastic			
7B	1'x1' Vinyl Floor Tiles Grey with White and dark grey flecks – Floor Tile			
7B	1'x1' Vinyl Floor Tiles Grey with White and dark grey flecks – Mastic			
7C	1'x1' Vinyl Floor Tiles Grey with White and dark grey flecks – Floor Tile			
7C	1'x1' Vinyl Floor Tiles Grey with White and dark grey flecks – Mastic			





Sample No.	Material Description	Sample Location	Asbestos Content	Material Classification
8A	Interior Concrete Block Mortar	Door#1	<0.25% Chrysotile	Non-ACM
8B		Door#3		
8C		Door#17		





As per O.Reg. 278/05, ACM contains $\geq 0.5\%$ asbestos by dry weight.

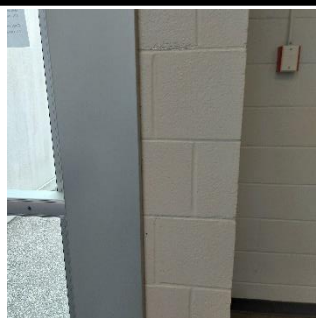

Materials assessed for asbestos content are summarized in the following table based on the type/use of the material.

Table 3: Results of Assessment for Asbestos-Containing Materials

Sprayed and Loose Fill Insulating Materials	Location/Description
Sprayed Fireproofing	None identified in subject building.
Sprayed Insulation	None identified in subject building.
Loose Fill / Vermiculite Insulation	None identified in subject building. Interior portions of concrete block walls could not be assessed. However, it is not expected that these walls are insulated with loose fill or vermiculite insulation
Thermal System Insulation	Location/Description
Mechanical Pipe Insulation – Straights	None identified in subject building.
Mechanical Pipe Insulation – Fittings (elbows, valves, tees, hangars, etc.)	None identified in subject building.
HVAC Duct Insulation	None identified in subject building.
Breeching / Exhaust Insulation	None identified in subject building.
Tank Insulation	None identified in subject building.
Boiler Insulation	None identified in subject building.
Other Mechanical Equipment Insulation	None identified in subject building.

Architectural Finishes & Finishing Materials	Location/Description	
Sprayed Texture / Stucco Finishes	Texture coat finishes on wall were observed in the subject building. Bulk samples were collected during the assessment and results of analysis confirmed that this building material is not asbestos-containing. Refer to sample set 6 in Table 2.	
Plaster Finishes	None identified in subject building.	
Drywall Joint Compound	Drywall joint compound (drywall wall finishes) was observed in the subject building. Bulk samples were collected during the assessment and results of analysis confirmed that this building material is not asbestos-containing. Refer to sample set 3 in Table 2.	
Ceiling Tiles	Location/Description	
Lay-in Acoustic Ceiling Tiles	Lay-in ceiling tiles were observed in the subject building. Bulk samples were not collected as the ceiling tiles were built with non-asbestos fiberglass with paper backing.	
Glued-on Acoustic Ceiling Tiles	None identified in subject building.	
Cement Ceiling Panels	None identified in subject building.	
Flooring	Location/Description	
Vinyl Floor Tiles	Vinyl floor tiles (1.5'x1.5' Grey Vinyl Floor Tiles with White and Black Flecks) were observed in the subject building. Bulk samples were collected during the assessment and results of analysis confirmed that this building material is not asbestos-containing. Refer to sample set 2 in Table 2.	

Vinyl Floor Tiles (continued)	Vinyl floor tiles (1'x1' Vinyl Floor Tiles Grey with White and dark grey flecks) were observed in the subject building. Bulk samples were collected during the assessment and results of analysis confirmed that this building material is not asbestos-containing. Refer to sample set 7 in Table 2.	
Vinyl Sheet Flooring	Vinyl sheet flooring (Dark Grey) was observed in the subject building. Bulk samples were collected during the assessment and results of analysis confirmed that this building material is not asbestos-containing. Refer to sample set 4 in Table 2.	
	Vinyl sheet flooring (Yellow) was observed in the subject building. Bulk samples were collected during the assessment and results of analysis confirmed that this building material is not asbestos-containing. Refer to sample set 5 in Table 2.	
Mastic	Mastic associated with vinyl floor tiles and sheet was observed in the subject building. Bulk samples were collected during the assessment and results of analysis confirmed that this building material is not asbestos-containing. Refer to sample set 2, 4 & 7 in Table 2.	
Asbestos Cement Products	Location/Description	
Piping	None identified in subject area.	
Roofing, Siding, Wallboard	None identified in subject building.	

Other Cement Products	Interior Concrete Block Mortar was observed in the subject building. Bulk samples were collected during the assessment and results of analysis confirmed that this building material is not asbestos-containing. Refer to sample set 8 in Table 2.	
Exterior Building Materials	Location/Description	
Caulking	Exterior Door Frame Caulking was observed in the subject building. Bulk samples were collected during the assessment and results of analysis confirmed that this building material is not asbestos-containing. Refer to sample set 1 in Table 2.	
Shingles	None identified in subject building.	
Misc. Materials	Location/Description	
Suspect ACM	-Texture Coat on Ceiling Canopy (Door#9, Building D)	

2.1.2 Lead

Laboratory analytical results for paints tested to determine lead content are summarized in the following table. The Laboratory Certificate of Analysis is included in Appendix D. Refer to Section 3.1.2 of this report for recommended lead abatement procedures (if any) that correspond to the type of proposed construction, renovation, or demolition work.

Table 4: Results of Paint Condition and Lead Content Assessment

Sample No.	Location	Surface	Paint Colour	Condition	Lead Conc. (% by wt.)	Material Classification
L-1	Door#2	Drywall	White	Good	<0.0090%	LLL
L-2	Door#3	Drywall	Red	Good	<0.0081%	LLL
L-3	Door#2	Drywall	Dark Grey	Good	<0.024%	LLL

LCP: Lead-Containing Paint (>0.1% Lead Content); LLL: Low-Level Lead Paint (≤0.1% Lead Content)

Suspect lead-containing materials observed in the subject building included the following:

- glazing associated with ceramic tiles
- solder in electrical components

2.1.3 Mercury

Mercury is present in the subject building in the form of:

- liquid in thermostats

2.1.4 Silica

A number of building materials were identified in the subject building that are ***suspected to contain crystalline silica***. This includes the following materials:

- drywall walls/drywall joint compound
- concrete
- mortar

2.1.5 Other Designated Substances

Acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride were not included in the assessment as these substances are not expected to be a significant component of building materials or present in a form that would represent an exposure concern. Additionally, no specific information regarding their use was provided to us.

2.2 Other Hazardous Materials

2.2.1 Chemical Hazards

No visible evidence of UFFI installation (i.e. injection openings) or overspray of foam insulation at wall/ceiling joints was identified in the subject building.

2.2.2 Biological Hazards

2.2.2.1 Mould Contamination

There was no visible evidence of obvious mould growth on building finishes in the subject building at the time of the assessment. In addition, there was no visible evidence of any significant water staining or discolouration to building finishes in the subject building that would suggest the potential for hidden mould growth behind these finishes.

2.2.2.2 Pest Infestation

There was no visible evidence of a pest infestation in the subject building.

2.2.3 Environmental Hazards

2.2.3.1 Polychlorinated Biphenyls (PCBs)

No sources of polychlorinated biphenyls (PCBs) were observed in the subject building.

2.2.3.2 Ozone Depleting and Global Warming Substances

No fixed equipment suspected to contain ODS/GWS was observed in the subject building.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 Designated Substances

3.1.1 Asbestos

As results summarized in Table indicate, no asbestos was detected in any of the bulk samples of exterior door frame caulking, vinyl floor tiles and sheeting and associated mastic, texture coat finishes on wall, drywall joint compound (drywall wall finishes) or interior concrete block mortar retrieved for analysis. Therefore, these building materials are considered to be Non-ACM and there are no requirements for management, disturbance or removal of these materials under O. Reg. 278/05.

The following building materials are ***suspected to be asbestos-containing*** but were not sampled as sampling would compromise the integrity of the material, lack of accessibility or potential hazards to the surveyor:

-Texture Coat on Ceiling Canopy (Door#9, Building D)

Refer to Appendix A (Summary of ACM Occurrences) and Appendix B (Site Drawings) for types, locations, estimated quantities, and condition of asbestos-containing materials identified in the subject area.

Removal or disturbance of identified asbestos-containing materials must be conducted in accordance with O.Reg. 278/05. Asbestos containing materials in Poor condition must be removed and/or repaired immediately following applicable asbestos abatement procedures. Asbestos-containing materials in Good condition can remain in place until major system upgrading, maintenance or demolition which could result in disturbance of this material.

General Recommendations: The removal or disturbance of ACM must follow the measures and procedures indicated in O. Reg. 278/05. This work should be conducted by workers who have received proper training by a “competent person” in the hazards of asbestos exposure, personal hygiene and work practices, and the use and care of respirators and protective clothing. Any worker/supervisor who works in a Type 3 operation must successfully complete the Asbestos Abatement Worker or Supervisor Training Program approved by the Ministry of Training, Colleges and Universities. It is recommended that all work involving the removal or disturbance of ACM be subject to

inspection and testing to document conformance with O. Reg. 278/05 requirements. The degree of inspection and testing is dependent on site-specific conditions such as the type, duration, size and location of the work. In most circumstances Type 3 operations require a visual inspection and clearance air testing to be conducted by a competent worker on completion of the work. The inspection should be conducted to ensure that the enclosure and the work area inside the enclosure are free from visible dust, debris or residue that may contain asbestos. Clearance air testing for Type 3 operations requires a minimum number of air samples to be taken (depending on the size of the work area) following specific sampling and analytical procedures and all samples taken must meet the clearance criteria set out in O. Reg. 278/05.

3.1.2 Lead

Results of paint chip analysis for the determination of lead content indicated that white, dark grey and red paint associated with drywall wall finishes is considered a 'low-level lead paint' ($\leq 0.1\%$ based on requirements of the Environmental Abatement Council of Ontario (EACO) Lead Guideline (2014)). If the 'low-level lead paint' is disturbed in a non-aggressive manner (no use of power tools/abrasive blasting, grinding, welding, heating, etc.), then respirators are not considered necessary. However, Class 1 measures and procedures should still be implemented during the non-aggressive disturbance of 'low-level lead paints', including, but not limited to, no smoking, eating, drinking and chewing gum in the work area; dust suppression methods must be implemented; and facilities must be made available so that workers can wash their hands and face.

Additional suspect lead-containing products not anticipated to be disturbed during construction includes solder on pipe fittings and electrical components. Future testing of these materials and specific handling/disposal requirements may be necessary if/when these materials are to be disturbed.

At this time the method of disturbance, if any, of lead-containing materials is unknown. It is recommended that any contractor whose work requires lead-containing materials to be disturbed consult the EACO or Ontario MOL guidelines prior to the start of work to determine the Class/Type of operation(s) and the corresponding control measures (engineering controls, work/hygiene practices, protective clothing and equipment and worker training) necessary to conduct the work in a manner that will prevent worker overexposure to lead. The following table outlines the classification of lead disturbance based on the EACO guideline.

Operation	Description
Class 1	<ol style="list-style-type: none"> 1. Removal of lead-containing or lead-based paints and surface coatings with a chemical gel/stripper or paste; 2. Application of lead-containing or lead-based paints and surface coatings with a brush, roller or sponge. 3. Installation or removal of lead sheeting or flashing. 4. Installation or removal of lead-containing packing, babbitt, caulking, gasket or similar material. 5. Removal of materials coated with lead-containing or lead-based paints and surface coatings, using non-powered hand tools, where the material remains chiefly intact and is not crumbled, pulverized or powdered. 6. Operating construction or demolition equipment (e.g. excavator, bulldozer) during building renovation or demolition where lead-based paints or surface coatings are present on building materials and are being disturbed. 7. Soldering with lead solder. 8. Removing lead-containing or lead-based paints or surface coatings with a heat gun. 9. Removing lead-containing and lead-based paints and surface coatings using a high-pressure water jet (e.g. pressure washer).
Class 2a	<ol style="list-style-type: none"> 1. Removal of lead-containing or lead-based paints and surface coatings or lead-containing materials using a power tool that has an effective dust collection system equipped with a HEPA filter. 2. Welding, torching or high temperature cutting of lead-containing materials indoors when using an effective fume collector or smoke eater that filters and exhausts lead fume and expels it directly outdoors (away from occupants, entrances, walkways, rest areas, etc.). Fume collector or smoke eater must have effective source control and capture velocity, minimum of 0.5 metres per second (100 feet per minute) at the work surface. 3. Welding, torching or high temperature cutting of lead-containing and lead-based paints and surface coatings or lead-containing materials outdoors. 4. Removal of lead-containing mortar using handheld non-powered tools. 5. Removal of lead-containing and lead-based paints and surface coatings or lead-containing materials by scraping or sanding (including wet sanding) using non-powered hand tools. 6. Demolition of plaster or building components that crumble, pulverize or powder and are covered with lead-containing or lead-based paints or surface coatings. 7. Clean up and removal of a significant amount of lead-containing dust and debris (that can be made easily airborne) using wet methods or HEPA vacuums.
Class 2b	<ol style="list-style-type: none"> 1. Spray application of lead-containing paints and surface coatings

Operation	Description
Class 3a	<ol style="list-style-type: none"> 1. Removal of lead-containing or lead-based paints and surface coatings or lead-containing materials using a power tool without an effective dust collection system equipped with a HEPA filter. 2. Welding, torching or high temperature cutting of lead-containing materials indoors or in a confined space (e.g. within a ditch or pit). 3. Removal of lead-containing mortar using a powered cutting device. 4. Burning of a material containing lead. 5. Removal, cleaning or repair of a ventilation system or ductwork used for controlling lead exposure. 6. Spray application of lead-based paints and surface coatings. 7. In the absence of an exposure assessment: <ol style="list-style-type: none"> a. demolition or cleanup of a facility where lead-containing products were manufactured and significant dust and debris, which can be made easily airborne, is present. b. cleanup of dust and debris down range of a firing station in an indoor firing range. an operation that may expose a worker to lead dust, fume or mist that is not a Class 1, Class 2, or Class 3B operation.
Class 3b	<ol style="list-style-type: none"> 1. Abrasive blasting of lead-containing and lead-based paints and surface coatings or lead-containing materials (including wet, slurry and dry abrasive blasting and dry-ice blasting).

3.1.3 Mercury

Although no mercury was visibly identified in equipment, dismantling of equipment was not conducted to verify the presence/absence of mercury. It is cautioned that thermometers, barometers and other measuring devices (pressure gauges/sensors, vacuum gauges, manometers, etc.), thermostats and a variety of other electrical switches (temperature sensitive, tilt switches, float switches, etc.) may contain mercury that may not be visible without dismantling the equipment. Such devices should be assumed to contain mercury until proven otherwise and similar precautions to those outlined above should be taken if any of these items are to be disturbed or taken out of service in the future.

3.1.4 Silica

Suspect silica-containing materials were identified to be present in the subject building. In their current state, building materials containing silica do not represent a risk to building occupants or construction workers. Risks associated with exposure to silica arise during demolition activities that cause silica dust to be created (particularly grinding, drilling or cutting operations and during major demolition), resulting in a crystalline silica inhalation hazard.

If any materials suspected to contain silica are to be removed or otherwise disturbed as a result of renovation/demolition activities it is recommended that procedures be put in place to control the generation of dust (such as routine water misting) and thus reduce

the potential for worker exposure. Workers that have the potential to be exposed to airborne silica should also wear appropriate protective clothing and respiratory protection. Any work involving the disturbance of silica-containing materials should follow the procedures outlined in the Ontario MOL “Silica on Construction Projects” guideline (April 2011). The appropriate engineering controls, work practices, hygiene practices, personal protective measures and training necessary to conduct the work in a safe manner are provided in this guideline. The general measures and procedures (or Type of operation) necessary depends on the type of work to be conducted. The following table outlines the classification of silica disturbance based on the Ontario MOL guideline.

Operation	Description
Type 1	<ol style="list-style-type: none"> 1. The drilling of holes in concrete or rock that is not part of a tunneling operation or road construction. 2. Milling of asphalt from concrete highway pavement 3. Charging mixers and hoppers with silica sand (sand consisting of at least 95% silica) or silica flour (finely ground sand consisting of at least 95% silica) 4. Any other operation at a project that requires the handling of silica-containing material in a way that may results in a worker being exposed to airborne silica. 5. Entry into a dry mortar removal or abrasive blasting area while airborne dust is visible for less than 15 minutes for inspection and/or sampling. 6. Working within 25 metres of an area where compressed air is being used to remove silica-containing dust outdoors.
Type 2	<ol style="list-style-type: none"> 1. Removal of silica containing refractory materials with a jackhammer 2. The drilling of holes in concrete or rock that is part of a tunneling or road construction. 3. The use of a power tool to cut, grind, or polish concrete, masonry, terrazzo or refractory materials. 4. The use of a power tool to remove silica containing materials. 5. Tunneling (operation of the tunnel boring machine, tunnel drilling, and tunnel mesh installation). 6. Tuckpoint and surface grinding 7. Dry mortar removal with an electric or pneumatic cutting device 8. Dry method dust cleanup from abrasive blasting operations 9. The use of compress air outdoors for removing silica dust 10. Entry into area where abrasive blasting is being carried out for more than 15 minutes
Type 3	<ol style="list-style-type: none"> 1. Abrasive blasting with an abrasive that contains >1% silica 2. Abrasive blasting or a material that contains >1% silica

3.1.5 Other Designated Substances

No other designated substances are expected to be a component of building materials in the subject building in a form that would represent an exposure concern. Therefore, no protective measures or procedures specific to acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride are considered necessary.

3.2 Other Hazardous Materials

3.2.1 Chemical Hazards

As no UFFI was identified or is suspected to be present in the subject building, no further action is required. However, given that no destructive testing was conducted, there is a

remote possibility that UFFI could be hidden within locations such as exterior wall cavities. If suspect foam insulation is identified during renovation/demolition activities work should be stopped and the area should be re-assessed to evaluate conditions and determine appropriate control measures and worker protection, if necessary.

3.2.2 Biological Hazards

3.2.2.1 Mould Contamination

No mould contamination was identified in the subject building and no further action is required at this time. Although no obvious mould contamination or evidence to suggest possible hidden mould contamination was identified in the subject building, there is still a potential for hidden mould growth to exist behind or underneath building finishes. Should suspect mould growth be discovered during the course of renovation or demolition work, Safetech recommends that all work stop so that the area can be assessed to evaluate proper control measures and remediation protocols in order to avoid worker exposure to mould and possible contamination of adjacent areas.

3.2.2.2 Pest Infestation

No visual evidence of any significant pest infestation was observed in the subject building. Therefore, no additional precautionary measures are deemed necessary for protection against biological contaminants potentially associated with pest infestation.

3.2.3 Environmental Hazards

3.2.3.1 Polychlorinated Biphenyls (PCBs)

No equipment was identified in the subject building that is expected to be PCB-containing.

3.2.3.2 Ozone Depleting and Global Warming Substances

No equipment was identified in the subject building that is expected to contain ozone depleting or global warming substances. As such, no recommendations are considered necessary at this time.

4.0 LIMITATIONS

The information and recommendations detailed in this report were carried out by trained professional and technical staff in accordance with generally accepted environmental and industrial hygiene work practices and procedures. Recommendations provided in this report have been generated in accordance with accepted industry guidelines and practices. These guidelines and practices are considered acceptable as of the date of this report.

In preparation of this report, Safetech relied on information supplied by others, including without limitation, information pertaining to the history and operation of the site, test

results and reports of other consultants and testing services provided by independent laboratories. Except as expressly set out in this report, Safetech has not made any independent verification of information provided by independent entities.

The collection of samples at the location noted was consistent with the scope of work agreed-upon with the person or entity to whom this report is addressed and the information obtained concerning prior site investigations. As conditions between samples may vary, the potential remains for the presence of unknown additional contaminants for which there were no known indicators.

The analytical method used for determination of asbestos content meets the requirements of O. Reg. 278/05. However, small asbestos fibres may be missed by PLM due to resolution limitations of the optical microscope. Interfering binder/matrix and/or low asbestos content may also hinder positive identification by PLM. These conditions are common for vermiculite attic insulation (VAI) and non-friable organically bound (NOB) materials such as vinyl floor tiles, roofing materials, mastics and caulking and can lead to “false negative” results. If PLM analytical results for these types of materials indicate no asbestos detected they have been reported as “Presumed Non-ACM”. Due to limitations of the analytical method we cannot confirm that low quantities of asbestos are not present in these samples using solely PLM analysis. Additional analytical procedures should be considered for such materials to rule out false negative results.

Conclusions are based on site conditions at the time of inspection and can only be extrapolated to an undefined limited area around inspected locations. The extent of the limited area depends on building construction and conditions. Building materials that are not detailed within this survey due to inaccessibility during the time of survey and/or are uncovered during renovation/demolition activities should be properly assessed by a qualified person prior to their disturbance. Safetech cannot warrant against undiscovered environmental liabilities. If any information becomes available that differs from the findings in this report, we request that we be notified immediately to reassess the conclusions provided herein.

No other person or entity is entitled to use or rely upon this report without the express written consent of Safetech and the person or entity to who it is addressed. Any use that a third party makes of this report, or any reliance based on conclusions and recommendations made, are the responsibility of such third parties. Safetech accepts no responsibility for damages suffered by third parties as a result of actions based on this report.

Appendix A: Summary of ACM Occurrences

Floor	System	Material	Description	Classification	Friable/ Non-Friable	Condition	Est. Quantity	Unit	Access	Action
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No asbestos-containing materials were identified during the assessment.

Appendix B: Site Drawings

Appendix C: Laboratory Certificate of Analysis – Asbestos



EMSL Canada Inc.

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<http://www.EMSL.com> / torontolab@emsl.com

EMSL Canada Order 552112258
Customer ID: 55SELI62
Customer PO: 3210562
Project ID:

Attn: Yash Panchal
Safetech Environmental
3045 Southcreek Road
Unit 14
Mississauga, ON L4X 2X7
Phone: (905) 624-2722
Fax: (905) 624-4306
Collected: 7/22/2021
Received: 7/28/2021
Analyzed: 7/30/2021
Proj: 3210562_Seneca College Newnham Campus_Door Replacement Project DSS

Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Client Sample ID: 1A

Lab Sample ID: 552112258-0001

Sample Description: Exterior Door Frame Caulking - Door#1

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
	Date		Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2021	Gray	0.0%	100%	None Detected	

Client Sample ID: 1B

Lab Sample ID: 552112258-0002

Sample Description: Exterior Door Frame Caulking - Door#4

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
	Date		Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2021	Gray	0.0%	100%	None Detected	

Client Sample ID: 1C

Lab Sample ID: 552112258-0003

Sample Description: Exterior Door Frame Caulking - Door#14

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
	Date		Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/30/2021	Gray	0.0%	100%	None Detected	

Client Sample ID: 2A-Floor Tile

Lab Sample ID: 552112258-0004

Sample Description: 1.5'x1.5' Grey Vinyl Floor Tiles with white and black flecks - Door1, 2 and 3

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
	Date		Fibrous	Non-Fibrous		
PLM	7/30/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 2A-Mastic

Lab Sample ID: 552112258-0004A

Sample Description: 1.5'x1.5' Grey Vinyl Floor Tiles with white and black flecks - Door1, 2 and 3

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
	Date		Fibrous	Non-Fibrous		
PLM	7/30/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 2B-Floor Tile

Lab Sample ID: 552112258-0005

Sample Description: 1.5'x1.5' Grey Vinyl Floor Tiles with white and black flecks - Door1, 2 and 3

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
	Date		Fibrous	Non-Fibrous		
PLM	7/30/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 2B-Mastic

Lab Sample ID: 552112258-0005A

Sample Description: 1.5'x1.5' Grey Vinyl Floor Tiles with white and black flecks - Door1, 2 and 3

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
	Date		Fibrous	Non-Fibrous		
PLM	7/30/2021	Gray	0.0%	100.0%	None Detected	



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EMSL Canada Order 552112258
Customer ID: 55SELI62
Customer PO: 3210562
Project ID:

Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Client Sample ID: 2C-Floor Tile **Lab Sample ID:** 552112258-0006

Sample Description: 1.5'x1.5' Grey Vinyl Floor Tiles with white and black flecks - Door1, 2 and 3

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 2C-Mastic/Leveler **Lab Sample ID:** 552112258-0006A

Sample Description: 1.5'x1.5' Grey Vinyl Floor Tiles with white and black flecks - Door1, 2 and 3

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Gray/Yellow	0.0%	100.0%	None Detected	

Client Sample ID: 3A **Lab Sample ID:** 552112258-0007

Sample Description: Drywall Joint Compound (Drywall Finishes) - Door#1

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	White	0.0%	100.0%	None Detected	

Client Sample ID: 3B **Lab Sample ID:** 552112258-0008

Sample Description: Drywall Joint Compound (Drywall Finishes) - Door#2

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	White	0.0%	100.0%	None Detected	

Client Sample ID: 3C **Lab Sample ID:** 552112258-0009

Sample Description: Drywall Joint Compound (Drywall Finishes) - Door#3

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	White	0.0%	100.0%	None Detected	

Client Sample ID: 3D **Lab Sample ID:** 552112258-0010

Sample Description: Drywall Joint Compound (Drywall Finishes) - Door#4

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	White	0.0%	100.0%	None Detected	

Client Sample ID: 3E **Lab Sample ID:** 552112258-0011

Sample Description: Drywall Joint Compound (Drywall Finishes) - Door#6

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	White	0.0%	100.0%	None Detected	

Client Sample ID: 4A-Sheet Flooring **Lab Sample ID:** 552112258-0012

Sample Description: Vinyl Floor Sheeting Dark Grey - Door#6

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Gray	0.0%	100.0%	None Detected	



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EMSL Canada Order 552112258
Customer ID: 55SELI62
Customer PO: 3210562
Project ID:

Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Client Sample ID: 4A-Mastic **Lab Sample ID:** 552112258-0012A

Sample Description: Vinyl Floor Sheeting Dark Grey - Door#6

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: 4B-Sheet Flooring **Lab Sample ID:** 552112258-0013

Sample Description: Vinyl Floor Sheeting Dark Grey - Door#6

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 4B-Mastic **Lab Sample ID:** 552112258-0013A

Sample Description: Vinyl Floor Sheeting Dark Grey - Door#6

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: 4C **Lab Sample ID:** 552112258-0014

Sample Description: Vinyl Floor Sheeting Dark Grey - Door#6

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 5A **Lab Sample ID:** 552112258-0015

Sample Description: Vinyl Floor Sheeting Yellow - Door#7

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: 5B **Lab Sample ID:** 552112258-0016

Sample Description: Vinyl Floor Sheeting Yellow - Door#7

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: 5C **Lab Sample ID:** 552112258-0017

Sample Description: Vinyl Floor Sheeting Yellow - Door#7

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: 6A **Lab Sample ID:** 552112258-0018

Sample Description: Texture coat finishes on wall - Door#8

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Gray/White	0.0%	100.0%	None Detected	*



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EMSL Canada Order 552112258
Customer ID: 55SELI62
Customer PO: 3210562
Project ID:

Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Client Sample ID: 6B **Lab Sample ID:** 552112258-0019
Sample Description: Texture coat finishes on wall - Door#8

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Gray/White	0.0%	100.0%	None Detected	*

Client Sample ID: 6C **Lab Sample ID:** 552112258-0020
Sample Description: Texture coat finishes on wall - Door#8

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Gray/White	0.0%	100.0%	None Detected	*

Client Sample ID: 7A-Floor Tile **Lab Sample ID:** 552112258-0021
Sample Description: 1x1 Vinyl Floor Tiles Grey with white and dark grey flecks - Door#17

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 7A-Mastic **Lab Sample ID:** 552112258-0021A
Sample Description: 1x1 Vinyl Floor Tiles Grey with white and dark grey flecks - Door#17

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 7B-Floor Tile **Lab Sample ID:** 552112258-0022
Sample Description: 1x1 Vinyl Floor Tiles Grey with white and dark grey flecks - Door#17

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 7B-Mastic **Lab Sample ID:** 552112258-0022A
Sample Description: 1x1 Vinyl Floor Tiles Grey with white and dark grey flecks - Door#17

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 7C-Floor Tile **Lab Sample ID:** 552112258-0023
Sample Description: 1x1 Vinyl Floor Tiles Grey with white and dark grey flecks - Door#17

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 7C-Mastic **Lab Sample ID:** 552112258-0023A
Sample Description: 1x1 Vinyl Floor Tiles Grey with white and dark grey flecks - Door#17

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Black	0.0%	100.0%	None Detected	



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EMSL Canada Order 552112258
 Customer ID: 55SELI62
 Customer PO: 3210562
 Project ID:

Test Report: Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05 via EPA600/R-93/116 Method

Client Sample ID: 8A

Lab Sample ID: 552112258-0024

Sample Description: Interior Concrete Block Mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Gray	0.0%	100.0%	<1% Chrysotile	
400 PLM Pt Ct	7/30/2021	Gray	0.0%	100.0%	<0.25% Chrysotile	

Client Sample ID: 8B

Lab Sample ID: 552112258-0025

Sample Description: Interior Concrete Block Mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Gray	0.0%	100.0%	<1% Chrysotile	
400 PLM Pt Ct	7/30/2021	Gray	0.0%	100.0%	<0.25% Chrysotile	

Client Sample ID: 8C

Lab Sample ID: 552112258-0026

Sample Description: Interior Concrete Block Mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/30/2021	Gray	0.0%	100.0%	<1% Chrysotile	
400 PLM Pt Ct	7/30/2021	Gray	0.0%	100.0%	<0.25% Chrysotile	

PLM: *Layers combined prior to analysis at client request

Analyst(s):

Caroline Allen PLM (4)
 PLM Grav. Reduction (1)
 Delaney Breen PLM (11)
 400 PLM Pt Ct (1)
 PLM Grav. Reduction (2)
 Tiffany Pilon PLM (16)
 400 PLM Pt Ct (2)

Reviewed and approved by:

Matthew Davis or other approved signatory
 or Other Approved Signatory

None Detected = <0.1%. EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Estimation of uncertainty available upon request. This report is a summary of multiple methods of analysis, fully compliant reports are available upon request. A combination of PLM and TEM analysis may be necessary to ensure consistently reliable detection of asbestos. This report must not be used to claim product endorsement by NVLAP of any agency or the U.S. Government.

Samples analyzed by EMSL Canada Inc. Mississauga, ON NVLAP Lab Code 200877-0

Report amended: 07/30/2021 14:56:21 Replaces initial report from: 07/30/2021 14:53:24 Reason Code: Data Entry-Change to Appearance

Appendix D: Laboratory Certificate of Analysis – Lead

**EMSL Canada Inc.**

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EMSL Canada Or 552112272

CustomerID: 55SELI62

CustomerPO: 3210562

ProjectID:

Attn: **Yash Panchal**
Safetech Environmental
3045 Southcreek Road
Unit 14
Mississauga, ON L4X 2X7

Phone: (905) 624-2722
Fax: (905) 624-4306
Received: 7/28/2021 02:02 PM
Collected: 7/22/2021

Project: **3210562_Seneca College, Newnham Campus_Door Replacement Project DSS****Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)***

<i>Client SampleDescription</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Weight</i>	<i>RDL</i>	<i>Lead Concentration</i>
L-1 552112272-0001	7/22/2021	7/29/2021 Site: Door#2 Paint on Drywall Finishes (White Paint)	0.2213 g	0.0090 % wt	<0.0090 % wt
L-2 552112272-0002	7/22/2021	7/29/2021 Site: Door#3 Paint on Drywall (Red Paint)	0.2458 g	0.0081 % wt	<0.0081 % wt
L-3 552112272-0003	7/22/2021	7/29/2021 Site: Door#2 Paint on Drywall (Dark Grey) Insufficient sample to reach reporting limit.	0.0820 g	0.024 % wt	<0.024 % wt

Rowena Fanto, Lead Supervisor
or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted.

Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.008% wt based on the minimum sample weight per our SOP. "<" (less than) result signifies the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. Definitions of modifications are available upon request.

Samples analyzed by EMSL Canada Inc. Mississauga, ON AIHA-LAP, LLC - ELLAP #196142

Initial report from 07/30/2021 11:36:39

Appendix E: Methodology

A. METHODOLOGY

The presence of hazardous materials was assessed by visual inspection. For the purpose of this assessment and this document, hazardous materials include designated substances as well as other chemical, biological and environmental hazards as defined below:

- Designated Substances (as prescribed by Ontario Regulation 490/09):
 - Acrylonitrile, Arsenic, Asbestos, Benzene, Coke Oven Emissions, Ethylene Oxide, Isocyanates, Lead, Mercury, Silica and Vinyl Chloride.
- Other Hazardous Materials:
 - **Chemical Hazards** – Urea Formaldehyde Foam Insulation (UFFI)
 - **Biological Hazards** – Mould Contamination and Pest Infestation
 - **Environmental Hazards** – Polychlorinated Biphenyls (PCBs) and Ozone Depleting & Global Warming Substances

Concealed locations such as above solid plaster or drywall ceilings, within plaster or drywall wall cavities, enclosed mechanical/pipe shafts and bulkheads, etc. were not investigated, unless otherwise stated in Section 1.3. Similarly, motors, blowers, electrical panels, etc., were not de-energized or disassembled to examine concealed conditions. Building materials that are not detailed within this assessment due to inaccessibility at the time of our site visit and/or uncovered during renovation/demolition activities should be assessed by a qualified person prior to their disturbance.

Bulk sampling followed by laboratory analysis was also conducted to confirm the presence/absence of select hazardous materials. Bulk sampling was limited to asbestos in building materials and lead in paint on building finishes (if flaking paint was present). All other hazardous materials were identified by visual inspection only. Where possible, observations regarding the location, quantity and condition of the hazardous materials identified were made in order to determine the potential for exposure and provide appropriate recommendations for remedial action, if necessary. Specific methodology for each individual hazardous material assessed is further detailed below. Neighborhood

A.1 Designated Substances

A.1.1 Asbestos

A visual inspection for the presence of both friable and non-friable asbestos-containing material (ACM) was performed in the subject area.

If an existing asbestos survey was available for review, Safetech relied on the information present. Building materials that were visually similar to materials previously tested and that were confirmed to be either ACM or non-ACM were considered to have consistent content and were not re-sampled. Additional sampling was only conducted where the investigator believed a need existed.

Bulk samples of building materials suspected to contain asbestos were retrieved by Safetech only for materials that were deemed to have a potential to be disturbed as part

of the construction project. Some suspect materials may not have been sampled during our investigation. Bulk samples were retrieved in accordance with Section 3 and Table 1 of Ontario Regulation 278/05, "Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations". The number of samples collected for each material was based on the type and quantity of the material present in the subject area. Each individual sample was placed in a labeled zip-lock bag for transportation to an independent laboratory (EMSL). EMSL is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for bulk asbestos fiber analysis.

Analysis for asbestos content was performed by the independent laboratory in accordance with the U.S. Environmental Protection Agency (EPA) Test Method *EPA/600/R-93-116: Method for the Determination of Asbestos in Bulk Building Materials (June 1993)*. This method identifies the asbestos fibre content of building materials using polarized light microscopy (PLM) analytical techniques, with confirmation of presence and type of asbestos made by dispersion staining optical microscopy. This analytical method meets the requirements set forth in Section 3 of O. Reg. 278/05.

In accordance with O. Reg. 278/05, an asbestos-containing material is defined as material that contains 0.5 per cent or more asbestos by dry weight. The laboratory was instructed to conduct "stop-positive" analysis for all materials. If a sample was found to be asbestos-containing no further analysis was conducted for samples taken from the same homogeneous material.

Locations where ACM have been identified are detailed in this report. Recommendations pertaining to ACM were made based on the friability, accessibility and condition of the material in conjunction with the potential for the planned renovation work to disturb the ACM.

A.1.2 Assessment of Asbestos-Containing Building Materials

Accessibility, Condition and Action (Priority) ratings for individual items, or defined areas were developed by Safetech to determine remedial action plans specific to the facility's needs.

A.1.2.1 Accessibility

Accessibility has been assessed as: (A) Accessible to all non-maintenance occupants of the building; (B) Accessible to maintenance staff without a ladder; (C) Accessible to maintenance staff with a ladder and exposed to view without moving a building component; (D) Accessible to maintenance staff with a ladder and concealed from view due to a building component; (E) Not accessible without demolition or removal of fixed building components or building systems

A.1.2.2 Condition

The condition of asbestos-containing materials identified in the subject area was assessed as Good (G), Fair (F) or Poor (P). The assessment criteria used to determine condition is dependent on material characteristics, such as friability. The following table summarizes the criteria used by Safetech to evaluate the condition of ACM.

Sprayed Fireproofing, Sprayed Insulation and Sprayed Texture Finishes	
Good	<ul style="list-style-type: none"> Surface shows no significant signs of damage, deterioration, or delamination (i.e. <1%). Unencapsulated or unpainted fireproofing or texture finishes, where no delamination or damage is observed. Encapsulated fireproofing or texture finishes where encapsulation applied after damage or fallout.
Fair	<ul style="list-style-type: none"> Not utilized as part of condition assessment for these materials.
Poor	<ul style="list-style-type: none"> Greater than 1% damage, delamination, or deterioration to surface.
In areas where damage exists in isolated locations, both Good and Poor may be applicable.	
Mechanical Insulation (boilers, breeching, ductwork, piping, tanks, equipment, etc.)	
Good	<ul style="list-style-type: none"> Insulation completely covered in jacketing and exhibits no evidence of damage or deterioration. Jacketing may have minor damage (i.e. scuffs or stains), but is not penetrated.
Fair	<ul style="list-style-type: none"> Minor penetrating damage to jacketed insulation (cuts, tears, nicks, deterioration or delamination). Undamaged insulation that had never been jacketed. Insulation is exposed but not showing surface disintegration. Extent of missing insulation ranges from minor to none. Damage that can be repaired.
Poor	<ul style="list-style-type: none"> Original insulation jacket is missing, damaged, deteriorated, or delaminated. Insulation is exposed and significant areas have been dislodged. Damage that cannot be easily repaired.
Non-Friable and Potentially Friable Materials (includes materials such as plaster finishes, drywall compound, ceiling tiles, asbestos cement products, vinyl asbestos tile and asbestos paper backed vinyl sheet flooring, etc., which have the potential to become friable when handled)	
Good	<ul style="list-style-type: none"> No significant damage. Material may be cracked or broken but is stable and not likely to become friable upon casual contact. No friable debris present
Fair	<ul style="list-style-type: none"> Not utilized as part of condition assessment for these materials.
Poor	<ul style="list-style-type: none"> Material is severely damaged. Debris is present or binder has disintegrated to the point where the material has become friable.
Asbestos-Containing Debris (noted separately from the presumed source material)	
Poor	<ul style="list-style-type: none"> Debris is always considered to be in Poor condition.

A.1.2.3 Action

Recommended ACTION for compliance and for management of identified asbestos-containing materials has been provided for each condition and component outlined in the above table. Recommendations have been classified under the following 8 ACTIONS:

1. Action dealing with the immediate clean-up of fallen ACM likely to be disturbed.

2. Action dealing with the need to use Type 2 asbestos procedures to enter an area (other than a ceiling space).
3. Action dealing with performing asbestos removal for compliance with regulations.
4. Action dealing with Type 2 asbestos procedures for ceiling entry where friable ACM debris is present on the top side of a ceiling system.
5. Action dealing with the removal of asbestos that goes beyond compliance requirements but simplifies the asbestos management.
6. Action dealing with the repair of asbestos.
7. Action dealing with ACM surveillance requirements of the regulation.
8. Action for dealing with material that may contain asbestos but was not conclusively identified in the survey.

A.1.2.4 Quantity

The approximate quantity and the units of measure related to the quantity (i.e.: linear feet (LF), square feet (SF) or each (EACH) as appropriate to the item) have only been provided for materials requiring remedial or corrective action (i.e. materials in Fair or Poor condition). In such circumstances any quantities provided should be considered rough estimates only and should not be solely relied upon for bidding purposes. It is the responsibility of the selected Contractor to obtain actual quantities.

A.2 Lead

If paint samples were collected, they would be collected by scraping the paint down to the base material substrate to ensure collection of all layers of paint. Care would be taken to avoid collection of the underlying substrate to reduce analytical substrate matrix interference.

If collected, paint samples would be submitted to an independent laboratory for the determination of lead content. The laboratory would participate in and accredited by the EPA (U.S. Environmental Protection Agency) for analysis of lead in paint chips through the American Industrial Hygiene Association (AIHA) Environmental Lead Laboratory Accreditation Program (ELLAP). Analysis would be conducted by the laboratory following the EPA "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (SW-846), Method 7000B "Flame Atomic Absorption Spectrophotometry". Result of analysis would be reported by the laboratory as the percentage of lead by weight of the total sample (% by wt.).

The presence of lead in other materials, such as lead sheeting, pigmented mortar, lead piping, lead solder, etc. would be noted where observed but not sampled to verify lead content. Lead can be present in these materials to varying degrees, depending on their age of application and should be considered lead-containing until proven otherwise.

A.3 Mercury

The type, quantity and location of mercury-containing equipment and devices in the subject area were determined by visual inspection based on appearance, age and knowledge of historical uses. Sampling for mercury-containing building materials and dismantling of suspect mercury-containing equipment was not performed. Where possible, attempts were made to verify the presence/absence of mercury by gathering additional information such as equipment model number, serial number, etc.

A.4 Silica

The presence of crystalline silica in building materials was determined through visual inspection of building materials only, based on knowledge of the historic use of silica-containing materials in certain building materials. Sampling to verify the presence/absence of silica in building materials was not performed.

A.5 Other Designated Substances

Other designated substances (i.e. acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride) are typically not expected to be encountered in building materials as significant constituents or in a form that would represent an exposure concern. These substances were not included in the assessment unless specific information regarding their use (e.g. in a manufacturing process) was provided to us. No sampling for these designated substances was performed.

A.6 Other Hazardous Materials

A.6.1 Chemical Hazards

A.6.1.1 Urea Formaldehyde Foam Insulation (UFFI)

A visual inspection to evaluate the possible presence of Urea Formaldehyde Foam Insulation (UFFI) was conducted in the subject area. Our visual inspection was limited to identifying evidence of possible UFFI installation (i.e. repaired nozzle holes in walls) and overspray at wall/ceiling joints, etc. No destructive testing or material sampling was conducted as part of the assessment.

A.7 Biological Hazards

A.7.1.1 Mould Contamination

A visual inspection to determine the possibility of mould growth was conducted in the subject area. The assessment was limited to identifying evidence of mould growth and water damage (staining, material deterioration, efflorescence, etc.) on the surface of building materials, which may be an indicator of hidden mould growth. No moisture content readings of building materials were taken to determine their current condition. Additionally, destructive testing to confirm the presence/absence of hidden mould growth and material sampling to verify the presence/absence of mould on suspect surfaces was beyond the scope of this assessment.

A.7.1.2 Pest Infestation

The presence and extent of pest infestation in the subject area was based on visually inspecting for evidence of significant pest activity, including signs of nesting, droppings/fecal accumulation, dead insects/carcass accumulation, etc. Evidence of minor pest presence was not considered to be indicative of pest infestation.

A.8 Environmental Hazards

A.8.1 Polychlorinated Biphenyls (PCBs)

The presence of PCB-containing electrical equipment in the subject area was identified through visual inspection and knowledge of the timeline of historical use.

For stand-alone transformers and capacitors, information from the manufacturer nameplate (such as the date of manufacture, dielectric fluid trade name or “Type Number”, etc.) was gathered, where possible, to further evaluate if the equipment may contain PCBs. This information was then compared to the information provided in the Environment Canada document entitled “Handbook on PCB’s in Electrical Equipment” (Third Edition, April 1988) to aid in identification. Transformers and capacitors confirmed to be manufactured after 1979 were assumed to not contain PCBs. If appropriate information could not be obtained it was assumed that the transformer or capacitor contained PCBs.

For fluorescent light ballasts, a representative number of fixtures were inspected, if possible, for assessment areas that were constructed prior to 1980 and where there was no history or evidence of a complete lighting retrofit. The light fixtures were examined by removing any lenses and ballast covers to expose the ballast and identify information such as ballast make, model number, serial number, and date code. This information was then compared to the information provided in the Environment Canada document entitled “Identification of Lamp Ballasts Containing PCBs” (Report EPS 2/CC/2 (revised) August 1991) to aid in identification. Ballasts that could not be confirmed Non-PCB-containing were assumed to contain PCBs. The light fixtures were not de-energized and ballasts were not removed to obtain manufacturer information that may be on the back of the ballast. If visual confirmation of ballast type could not be made it was assumed that light fixtures in areas constructed prior to 1980 that have not undergone a complete lighting retrofit have PCB-containing ballasts until proven otherwise.

No sampling of materials or fluids within equipment was conducted to verify the presence/absence of PCBs. Inspection and testing of other materials for PCB content, including (but not limited to) caulking, asphalt, oil-based paint, plastics, switches, electric cables and hydraulic fluids was beyond the scope of the assessment.

A.8.2 Ozone Depleting and Global Warming Substances

The presence of fixed equipment likely to contain ozone-depleting substances (ODS) and/or global-warming substances (GWS) was identified through visual inspection and

knowledge of the timeline of historical use. This included equipment such as chillers, air-conditioners, walk-in refrigeration and freezer units and fixed dry-chemical fire extinguishers, where chemicals such as hydrochlorofluorocarbons (HCFCs), hydrofluorocarbons (HFCs) or halons may be present. Where possible, information regarding the type and quantity of refrigerant present was obtained from the manufacturer nameplate. Our visual assessment was limited to fixed equipment in the subject area and did not include portable equipment such as stand-alone refrigerators, freezers, water coolers, air-conditioners and fire extinguishers, etc.