Designated Substance Report: How to Interpret Data

Last updated: January 23, 2023

uOttawa

What qualifies as a designated substance?

- **Acrylonitrile** (plastics, rubbers)
- **Arsenic** (hazardous waste sites)
- **Asbestos** (commonly used in building materials)
- **Benzene** (plastics, detergents, pesticides)
- **Coke oven emissions** (aluminum and steel industries)
- **Ethylene Oxide** (ethylene glycol)
- **Isocyanates** (paint, foam industry)
- **Lead** (Paint, pipe fittings)
- **Mercury** (thermometers, fluorescent light tubes)
- **Vinyl Chloride** (PVC pipes, hard plastics)
- **Silica** (concrete, cement)

Although there is a potential to find any of these designated substances on campus, those in RED are the ones workers are most likely to encounter.

uOttawa Designated Substance reports

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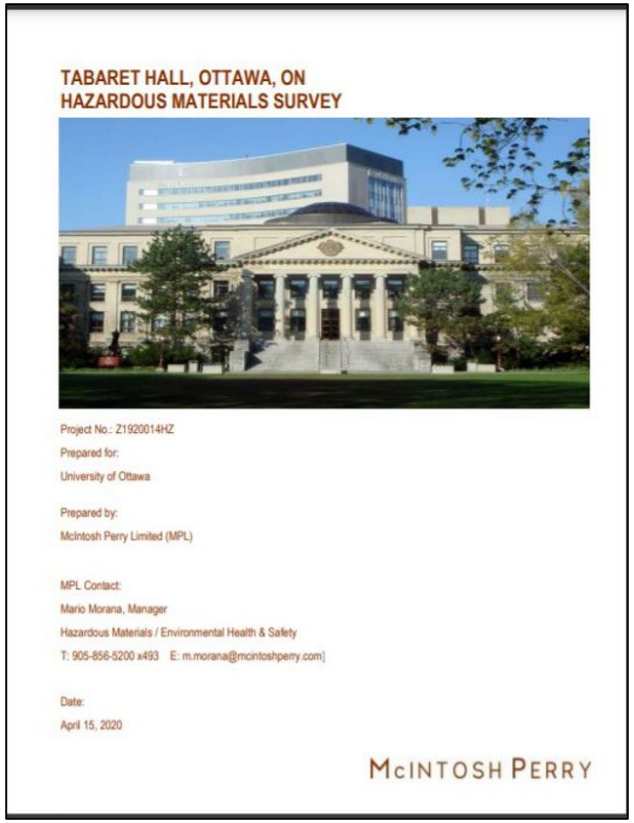
What is a Designated Substance Report?

- Determines the presence of hazardous substances on uOttawa property, reports can be found here
- Findings are confirmed through independent lab tests
- Contains an executive summary and 4 different sections:
  1. Introduction
  2. Property Description
  3. Findings and Recommendations
  4. General Considerations and Limitations


TABARET HALL, OTTAWA, ON
HAZARDOUS MATERIALS SURVEY

Project No.: Z1920014HZ
Prepared for:
University of Ottawa

Prepared by:
McIntosh Perry Limited (MPL)

MPL Contact:
Mario Morana, Manager
Hazardous Materials / Environmental Health & Safety
T: 905-856-5200 x493 E: m.morana@mcintoshperry.com

Date:
April 15, 2020

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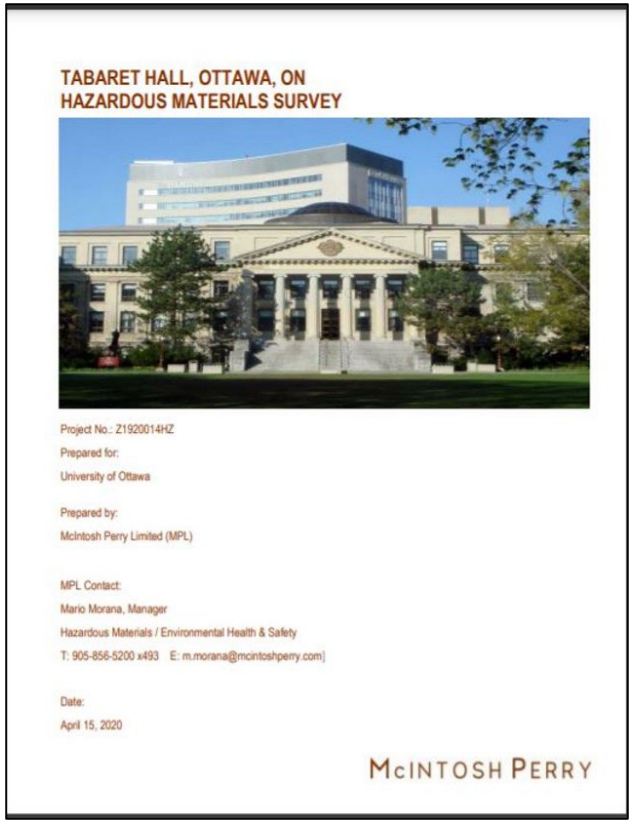
What is a Designated Substance Report?

- The next slides will take you through the 4 different sections in more detail. Opening one of our DSR reports is recommended to follow and reference throughout this training.

- All of the Designated Substance Reports can be found on our website and accessed here: DSR Reports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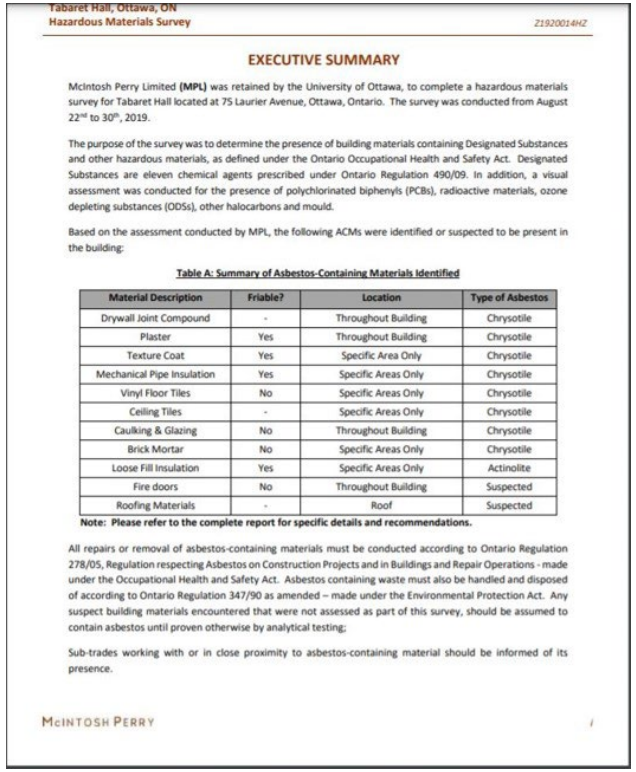
Executive Summary



Tabaret Hall, Ottawa, ON
Hazardous Materials Survey Z1920014HZ

EXECUTIVE SUMMARY

McIntosh Perry Limited **(MPL)** was retained by the University of Ottawa, to complete a hazardous materials survey for Tabaret Hall located at 75 Laurier Avenue, Ottawa, Ontario. The survey was conducted from August 22nd to 30th, 2019.

The purpose of the survey was to determine the presence of building materials containing Designated Substances and other hazardous materials, as defined under the Ontario Occupational Health and Safety Act. Designated Substances are eleven chemical agents prescribed under Ontario Regulation 490/09. In addition, a visual assessment was conducted for the presence of polychlorinated biphenyls (PCBs), radioactive materials, ozone depleting substances (ODSs), other halocarbons and mould.

Based on the assessment conducted by MPL, the following ACMs were identified or suspected to be present in the building:

Table A: Summary of Asbestos-Containing Materials Identified

Material Description	Friable?	Location	Type of Asbestos
Drywall Joint Compound	-	Throughout Building	Chrysotile
Plaster	Yes	Throughout Building	Chrysotile
Texture Coat	Yes	Specific Area Only	Chrysotile
Mechanical Pipe Insulation	Yes	Specific Areas Only	Chrysotile
Vinyl Floor Tiles	No	Specific Areas Only	Chrysotile
Ceiling Tiles	-	Specific Areas Only	Chrysotile
Caulking & Glazing	No	Throughout Building	Chrysotile
Brick Mortar	No	Specific Areas Only	Chrysotile
Loose Fill Insulation	Yes	Specific Areas Only	Actinolite
Fire doors	No	Throughout Building	Suspected
Roofing Materials	-	Roof	Suspected

Note: Please refer to the complete report for specific details and recommendations.

All repairs or removal of asbestos-containing materials must be conducted according to Ontario Regulation 278/05, Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations - made under the Occupational Health and Safety Act. Asbestos containing waste must also be handled and disposed of according to Ontario Regulation 347/90 as amended – made under the Environmental Protection Act. Any suspect building materials encountered that were not assessed as part of this survey, should be assumed to contain asbestos until proven otherwise by analytical testing;

Sub-trades working with or in close proximity to asbestos-containing material should be informed of its presence.

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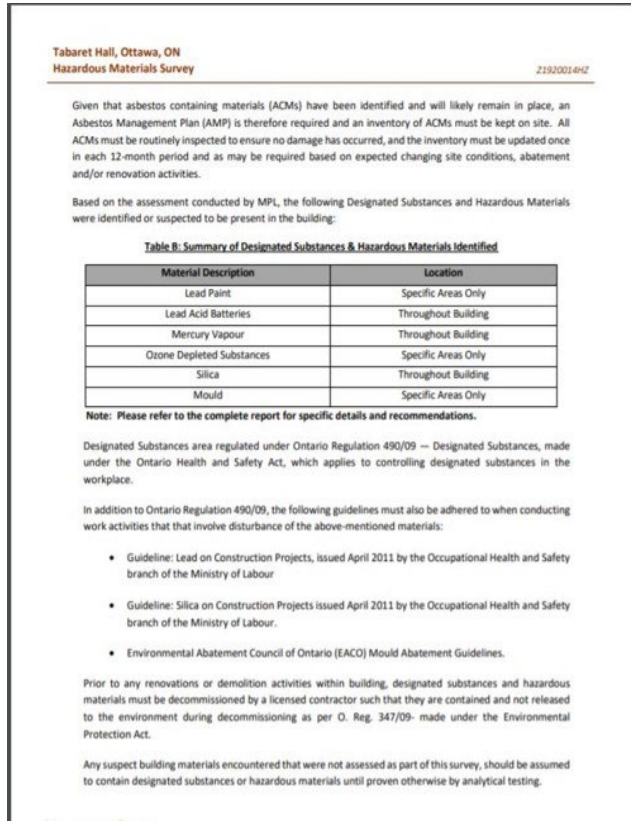
Global summary of findings without too much detail. This summary is very useful as a quick reference for asbestos containing material (ACM) present in the building.

Information value for worker:
HIGH



Tabaret Hall, Ottawa, ON
Hazardous Materials Survey Z1920014HZ

Given that asbestos containing materials (ACMs) have been identified and will likely remain in place, an Asbestos Management Plan (AMP) is therefore required and an inventory of ACMs must be kept on site. All ACMs must be routinely inspected to ensure no damage has occurred, and the inventory must be updated once in each 12-month period and as may be required based on expected changing site conditions, abatement and/or renovation activities.

Based on the assessment conducted by MPL, the following Designated Substances and Hazardous Materials were identified or suspected to be present in the building:

Table B: Summary of Designated Substances & Hazardous Materials Identified

Material Description	Location
Lead Paint	Specific Areas Only
Lead Acid Batteries	Throughout Building
Mercury Vapour	Throughout Building
Ozone Depleted Substances	Specific Areas Only
Silica	Throughout Building
Mould	Specific Areas Only

Note: Please refer to the complete report for specific details and recommendations.

Designated Substances area regulated under Ontario Regulation 490/09 -- Designated Substances, made under the Ontario Health and Safety Act, which applies to controlling designated substances in the workplace.

In addition to Ontario Regulation 490/09, the following guidelines must also be adhered to when conducting work activities that that involve disturbance of the above-mentioned materials:

- Guideline: Lead on Construction Projects, issued April 2011 by the Occupational Health and Safety branch of the Ministry of Labour
- Guideline: Silica on Construction Projects issued April 2011 by the Occupational Health and Safety branch of the Ministry of Labour.
- Environmental Abatement Council of Ontario (EACO) Mould Abatement Guidelines.

Prior to any renovations or demolition activities within building, designated substances and hazardous materials must be decommissioned by a licensed contractor such that they are contained and not released to the environment during decommissioning as per O. Reg. 347/09- made under the Environmental Protection Act.

Any suspect building materials encountered that were not assessed as part of this survey, should be assumed to contain designated substances or hazardous materials until proven otherwise by analytical testing.

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Executive Summary (continued)

Table A: Summary of Asbestos-Containing Materials Identified

Material Description	Friable?	Location	Type of Asbestos
Drywall Joint Compound	-	Throughout Building	Chrysotile
Plaster	Yes	Throughout Building	Chrysotile
Texture Coat	Yes	Specific Area Only	Chrysotile
Mechanical Pipe Insulation	Yes	Specific Areas Only	Chrysotile
Vinyl Floor Tiles	No	Specific Areas Only	Chrysotile
Ceiling Tiles	-	Specific Areas Only	Chrysotile
Caulking & Glazing	No	Throughout Building	Chrysotile
Brick Mortar	No	Specific Areas Only	Chrysotile
Loose Fill Insulation	Yes	Specific Areas Only	Actinolite
Fire doors	No	Throughout Building	Suspected
Roofing Materials	-	Roof	Suspected

Note: Please refer to the complete report for specific details and recommendations.

There are 2 location terms used when identifying designated substances:

1 - Throughout building

This means that tests revealed that the designated substance (asbestos) was found in that material in the entire building. Designated substance precautions must ALWAYS be used when dealing with that specific material.

2 - Specific areas only

This means that some material samples were found to contain the designated substance (asbestos) while other samples did not (i.e., different type or colour of VCT tiles). Site-specific testing needs to be done PRIOR to working with the material. If you don’t have time to conduct site-specific testing, you MUST treat the material as containing the designated substance (asbestos).

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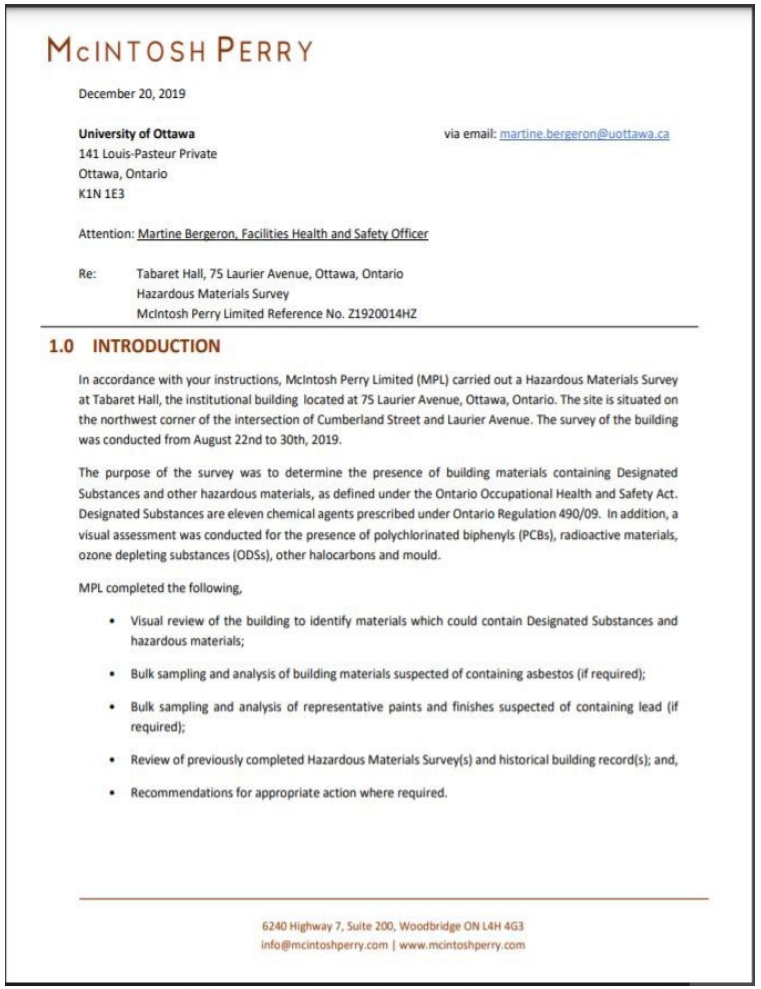
Section 1: Introduction

This section focuses on project criteria in terms of the scope of work. It explains how some samples were collected and that previous DSR information was used in creating this survey. There are no important information pertaining to identifying possible ACM.

Information value for worker:
LOW



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December 20, 2019

University of Ottawa
141 Louis-Pasteur Private
Ottawa, Ontario
K1N 1E3

via email: martine.bergeron@uottawa.ca

Attention: Martine Bergeron, Facilities Health and Safety Officer

Re: Tabaret Hall, 75 Laurier Avenue, Ottawa, Ontario
Hazardous Materials Survey
McIntosh Perry Limited Reference No. Z1920014HZ

1.0 INTRODUCTION

In accordance with your instructions, McIntosh Perry Limited (MPL) carried out a Hazardous Materials Survey at Tabaret Hall, the institutional building located at 75 Laurier Avenue, Ottawa, Ontario. The site is situated on the northwest corner of the intersection of Cumberland Street and Laurier Avenue. The survey of the building was conducted from August 22nd to 30th, 2019.

The purpose of the survey was to determine the presence of building materials containing Designated Substances and other hazardous materials, as defined under the Ontario Occupational Health and Safety Act. Designated Substances are eleven chemical agents prescribed under Ontario Regulation 490/09. In addition, a visual assessment was conducted for the presence of polychlorinated biphenyls (PCBs), radioactive materials, ozone depleting substances (ODSs), other halocarbons and mould.

MPL completed the following,

- Visual review of the building to identify materials which could contain Designated Substances and hazardous materials;
- Bulk sampling and analysis of building materials suspected of containing asbestos (if required);
- Bulk sampling and analysis of representative paints and finishes suspected of containing lead (if required);
- Review of previously completed Hazardous Materials Survey(s) and historical building record(s); and,
- Recommendations for appropriate action where required.

6240 Highway 7, Suite 200, Woodbridge ON L4H 4G3
info@mcintoshperry.com | www.mcintoshperry.com

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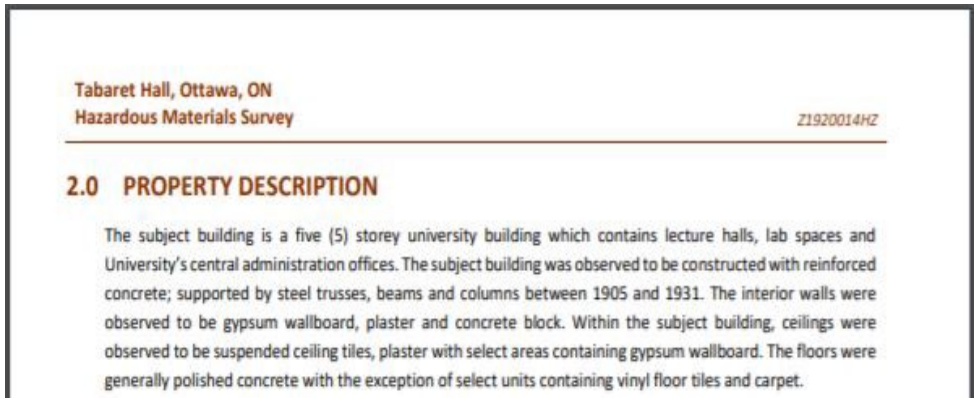
Section 2: Property Description

This section focuses on a global description of the building surveyed. Its main purpose is to discuss information such as:

- The year it was built
- The building material found throughout
- The usage of the space



Tabaret Hall, Ottawa, ON
Hazardous Materials Survey Z1920014HZ

2.0 PROPERTY DESCRIPTION

The subject building is a five (5) storey university building which contains lecture halls, lab spaces and University's central administration offices. The subject building was observed to be constructed with reinforced concrete; supported by steel trusses, beams and columns between 1905 and 1931. The interior walls were observed to be gypsum wallboard, plaster and concrete block. Within the subject building, ceilings were observed to be suspended ceiling tiles, plaster with select areas containing gypsum wallboard. The floors were generally polished concrete with the exception of select units containing vinyl floor tiles and carpet.

Information value for worker:
LOW

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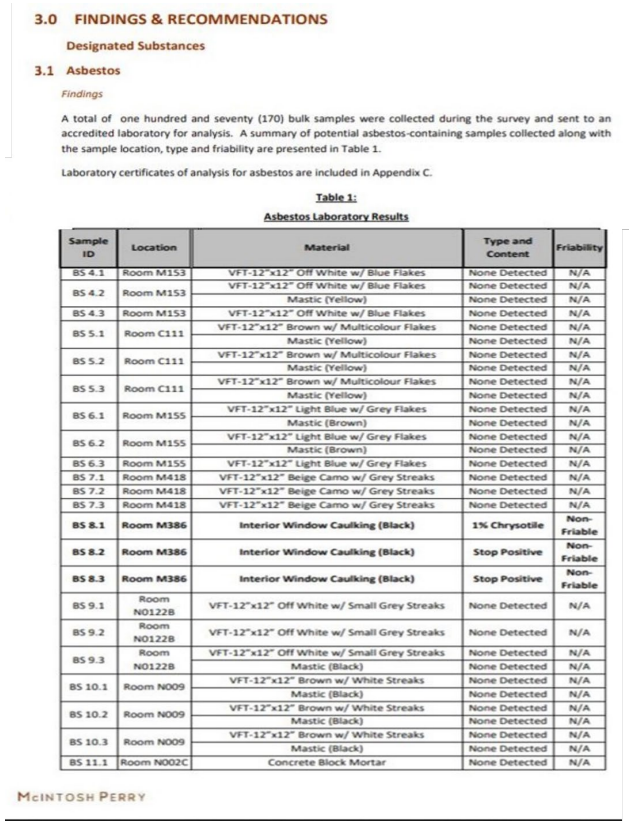
Section 3: Findings and Recommendations

This is the main section of the entire DSR. It contains all the positive or negative findings through the sampling of the various materials. The environmental consultant would have sampled all the different types of material. For example, a positive result would arise when the concentration of asbestos fibers reaches the legislative limit of 0.5% as per O.Reg. 278/05 . It is also important to know that this is non-destructive sampling, which means that samples are taken at the surface. If another material is hiding within a wall, this would not be included in this DSR.

Information value for worker:
MEDIUM



3.0 FINDINGS & RECOMMENDATIONS

Designated Substances

3.1 Asbestos

Findings

A total of one hundred and seventy (170) bulk samples were collected during the survey and sent to an accredited laboratory for analysis. A summary of potential asbestos-containing samples collected along with the sample location, type and friability are presented in Table 1.

Laboratory certificates of analysis for asbestos are included in Appendix C.

Table 1:
Asbestos Laboratory Results

Sample ID	Location	Material	Type and Content	Friability
BS 4.1	Room M153	VFT-12"x12" Off White w/ Blue Flakes	None Detected	N/A
BS 4.2	Room M153	VFT-12"x12" Off White w/ Blue Flakes	None Detected	N/A
		Mastic (Yellow)	None Detected	N/A
BS 4.3	Room M153	VFT-12"x12" Off White w/ Blue Flakes	None Detected	N/A
BS 5.1	Room C111	VFT-12"x12" Brown w/ Multicolour Flakes	None Detected	N/A
		Mastic (Yellow)	None Detected	N/A
BS 5.2	Room C111	VFT-12"x12" Brown w/ Multicolour Flakes	None Detected	N/A
		Mastic (Yellow)	None Detected	N/A
BS 5.3	Room C111	VFT-12"x12" Brown w/ Multicolour Flakes	None Detected	N/A
		Mastic (Yellow)	None Detected	N/A
BS 6.1	Room M155	VFT-12"x12" Light Blue w/ Grey Flakes	None Detected	N/A
		Mastic (Brown)	None Detected	N/A
BS 6.2	Room M155	VFT-12"x12" Light Blue w/ Grey Flakes	None Detected	N/A
		Mastic (Brown)	None Detected	N/A
BS 6.3	Room M155	VFT-12"x12" Light Blue w/ Grey Flakes	None Detected	N/A
BS 7.1	Room M418	VFT-12"x12" Beige Camo w/ Grey Streaks	None Detected	N/A
BS 7.2	Room M418	VFT-12"x12" Beige Camo w/ Grey Streaks	None Detected	N/A
BS 7.3	Room M418	VFT-12"x12" Beige Camo w/ Grey Streaks	None Detected	N/A
BS 8.1	**Room M386**	**Interior Window Caulking (Black)**	**1% Chrysotile**	**Non-Friable**
BS 8.2	**Room M386**	**Interior Window Caulking (Black)**	**Stop Positive**	**Non-Friable**
BS 8.3	**Room M386**	**Interior Window Caulking (Black)**	**Stop Positive**	**Non-Friable**
BS 9.1	Room N0122B	VFT-12"x12" Off White w/ Small Grey Streaks	None Detected	N/A
BS 9.2	Room N0122B	VFT-12"x12" Off White w/ Small Grey Streaks	None Detected	N/A
BS 9.3	Room N0122B	VFT-12"x12" Off White w/ Small Grey Streaks	None Detected	N/A
		Mastic (Black)	None Detected	N/A
BS 10.1	Room N009	VFT-12"x12" Brown w/ White Streaks	None Detected	N/A
		Mastic (Black)	None Detected	N/A
BS 10.2	Room N009	VFT-12"x12" Brown w/ White Streaks	None Detected	N/A
		Mastic (Black)	None Detected	N/A
BS 10.3	Room N009	VFT-12"x12" Brown w/ White Streaks	None Detected	N/A
		Mastic (Black)	None Detected	N/A
BS 11.1	Room N002C	Concrete Block Mortar	None Detected	N/A

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Section 3: Findings and Recommendations (continued)

Tabaret Hall, Ottawa, ON
Hazardous Materials Survey
Z1920014HZ

Sample ID	Location	Material	Type and Content	Friability
BS 4.1	Room M153	VFT-12"x12" Off White w/ Blue Flakes	None Detected	N/A
BS 4.2	Room M153	VFT-12"x12" Off White w/ Blue Flakes	None Detected	N/A
		Mastic (Yellow)	None Detected	N/A
BS 4.3	Room M153	VFT-12"x12" Off White w/ Blue Flakes	None Detected	N/A
BS 5.1	Room C111	VFT-12"x12" Brown w/ Multicolour Flakes	None Detected	N/A
		Mastic (Yellow)	None Detected	N/A
BS 5.2	Room C111	VFT-12"x12" Brown w/ Multicolour Flakes	None Detected	N/A
		Mastic (Yellow)	None Detected	N/A
BS 5.3	Room C111	VFT-12"x12" Brown w/ Multicolour Flakes	None Detected	N/A
		Mastic (Yellow)	None Detected	N/A
BS 6.1	Room M155	VFT-12"x12" Light Blue w/ Grey Flakes	None Detected	N/A
		Mastic (Brown)	None Detected	N/A
BS 6.2	Room M155	VFT-12"x12" Light Blue w/ Grey Flakes	None Detected	N/A
		Mastic (Brown)	None Detected	N/A
BS 6.3	Room M155	VFT-12"x12" Light Blue w/ Grey Flakes	None Detected	N/A
BS 7.1	Room M418	VFT-12"x12" Beige Camo w/ Grey Streaks	None Detected	N/A
BS 7.2	Room M418	VFT-12"x12" Beige Camo w/ Grey Streaks	None Detected	N/A
BS 7.3	Room M418	VFT-12"x12" Beige Camo w/ Grey Streaks	None Detected	N/A
BS 8.1	**Room M386**	**Interior Window Caulking (Black)**	**1% Chrysotile**	**Non-Friable**
BS 8.2	**Room M386**	**Interior Window Caulking (Black)**	**Stop Positive**	**Non-Friable**
BS 8.3	**Room M386**	**Interior Window Caulking (Black)**	**Stop Positive**	**Non-Friable**
BS 9.1	Room N0122B	VFT-12"x12" Off White w/ Small Grey Streaks	None Detected	N/A
BS 9.2	Room N0122B	VFT-12"x12" Off White w/ Small Grey Streaks	None Detected	N/A
BS 9.3	Room N0122B	VFT-12"x12" Off White w/ Small Grey Streaks	None Detected	N/A
		Mastic (Black)	None Detected	N/A
BS 10.1	Room N009	VFT-12"x12" Brown w/ White Streaks	None Detected	N/A
		Mastic (Black)	None Detected	N/A
BS 10.2	Room N009	VFT-12"x12" Brown w/ White Streaks	None Detected	N/A
		Mastic (Black)	None Detected	N/A
BS 10.3	Room N009	VFT-12"x12" Brown w/ White Streaks	None Detected	N/A
		Mastic (Black)	None Detected	N/A
BS 11.1	Room N002C	Concrete Block Mortar	None Detected	N/A

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"Positive Stop Analysis" refers to a laboratory analysis protocol that analyzes multiple samples of similar material and stops analysis when asbestos is identified

A finding of "Stop Positive" means that the material **DOES contain** asbestos

In this situation, all the black window caulking at TBT must be treated as ACM.

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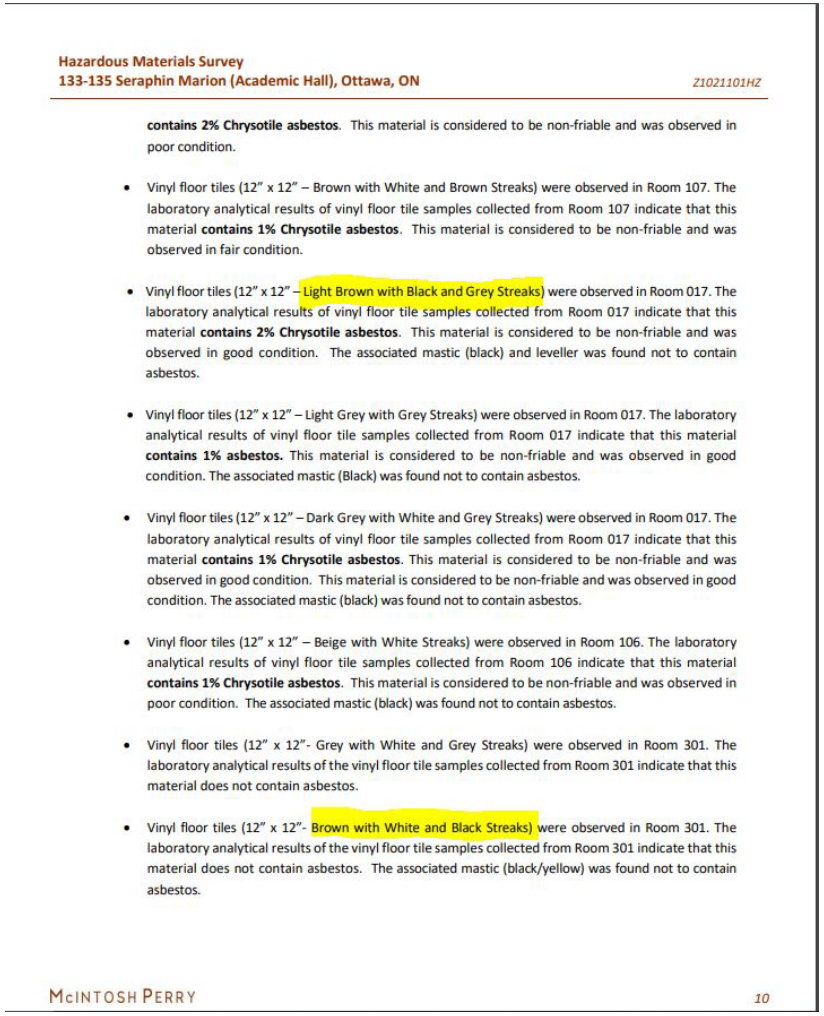
Section 3: Findings and Recommendations (continued)



Hazardous Materials Survey
133-135 Seraphin Marion (Academic Hall), Ottawa, ON
Z1021101HZ

contains 2% Chrysotile asbestos. This material is considered to be non-friable and was observed in poor condition.

- Vinyl floor tiles (12" x 12" – Brown with White and Brown Streaks) were observed in Room 107. The laboratory analytical results of vinyl floor tile samples collected from Room 107 indicate that this material **contains 1% Chrysotile asbestos**. This material is considered to be non-friable and was observed in fair condition.
- Vinyl floor tiles (12" x 12" – Light Brown with Black and Grey Streaks) were observed in Room 017. The laboratory analytical results of vinyl floor tile samples collected from Room 017 indicate that this material **contains 2% Chrysotile asbestos**. This material is considered to be non-friable and was observed in good condition. The associated mastic (black) and leveller was found not to contain asbestos.
- Vinyl floor tiles (12" x 12" – Light Grey with Grey Streaks) were observed in Room 017. The laboratory analytical results of vinyl floor tile samples collected from Room 017 indicate that this material **contains 1% asbestos.** This material is considered to be non-friable and was observed in good condition. The associated mastic (Black) was found not to contain asbestos.
- Vinyl floor tiles (12" x 12" – Dark Grey with White and Grey Streaks) were observed in Room 017. The laboratory analytical results of vinyl floor tile samples collected from Room 017 indicate that this material **contains 1% Chrysotile asbestos**. This material is considered to be non-friable and was observed in good condition. This material is considered to be non-friable and was observed in good condition. The associated mastic (black) was found not to contain asbestos.
- Vinyl floor tiles (12" x 12" – Beige with White Streaks) were observed in Room 106. The laboratory analytical results of vinyl floor tile samples collected from Room 106 indicate that this material **contains 1% Chrysotile asbestos**. This material is considered to be non-friable and was observed in poor condition. The associated mastic (black) was found not to contain asbestos.
- Vinyl floor tiles (12" x 12"- Grey with White and Grey Streaks) were observed in Room 301. The laboratory analytical results of the vinyl floor tile samples collected from Room 301 indicate that this material does not contain asbestos.
- Vinyl floor tiles (12" x 12"- Brown with White and Black Streaks) were observed in Room 301. The laboratory analytical results of the vinyl floor tile samples collected from Room 301 indicate that this material does not contain asbestos. The associated mastic (black/yellow) was found not to contain asbestos.

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The last part of Section 3 provides more detail on the designated substances. Here you can find information about the specific designated substance, such as which rooms it was sampled in and the results.

These paragraphs summarize the tables found throughout the DSR. This last section is informative and details specific ACM information. It also deals with every building material tested (positive or negative findings) and provides information on the other designated substances.

Information value for worker:
MEDIUM

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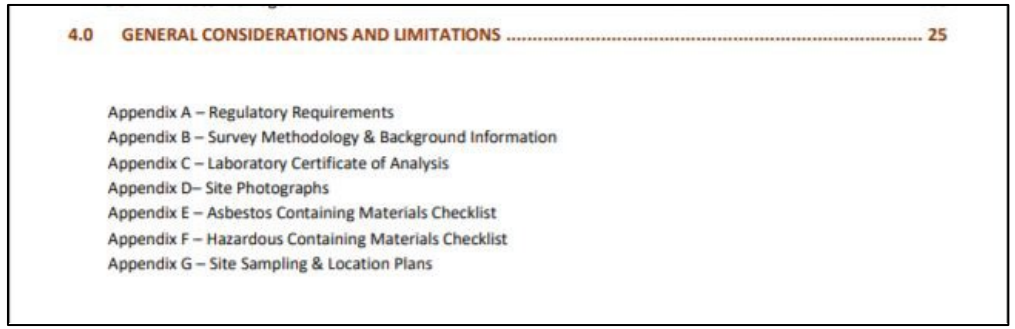
Section 4: General Considerations

This section starts with a general statement on environmental consultant liability.

It is followed by 7 appendices.



Information value for worker:
LOW to MEDIUM

4.0 GENERAL CONSIDERATIONS AND LIMITATIONS

The information presented in this report is based on information provided by others, direct visual observation made by personnel with **McIntosh Perry Limited (MPL)**, and the results of laboratory testing as identified herein.

It should be noted that there might be hazardous materials in locations not visible during our investigation. In the event such material is encountered during demolition operations in the building, this material should be tested and dealt with accordingly.

The findings detailed in this report are based upon the information available at the time of preparation of the report. No investigative method eliminates the possibility of obtaining imprecise or incomplete information. Professional judgement was exercised in gathering and analyzing the information obtained and in the formulation of our conclusions and recommendations.

MPL does not certify or warrant the environmental status of the property nor the building on the property.

Please note that the passage of time affects the information provided in the report. Environmental conditions of a site can change. Opinions relating to the site conditions are based upon information that existed at the time that the conclusions were formulated.

The client expressly agrees that it has entered into this agreement with MPL, both on its own behalf and as agent on behalf of its employees and principals.

The client expressly agrees that MPL's employees and principals shall have no personal liability to the client in respect of a claim, whether in contract, tort and/or any other cause of action in law. Accordingly, the client expressly agrees that it will bring no proceedings and take no action in any court of law against any of MPL's employees or principals in their personal capacity.

We trust that we have detailed our findings clearly and that we have satisfactorily addressed the scope of work you require at this time. In the event you wish us to review our findings with you, or require our services further in this regard, please do not hesitate to contact our office.

Yours truly,

MCINTOSH PERRY LIMITED

Bernard Peprah, ROHT
Project Manager
Hazardous Materials/ Environmental Health & Safety

Mario Morana, A.Sc.T.
Manager
Hazardous Materials/ Environmental Health & Safety

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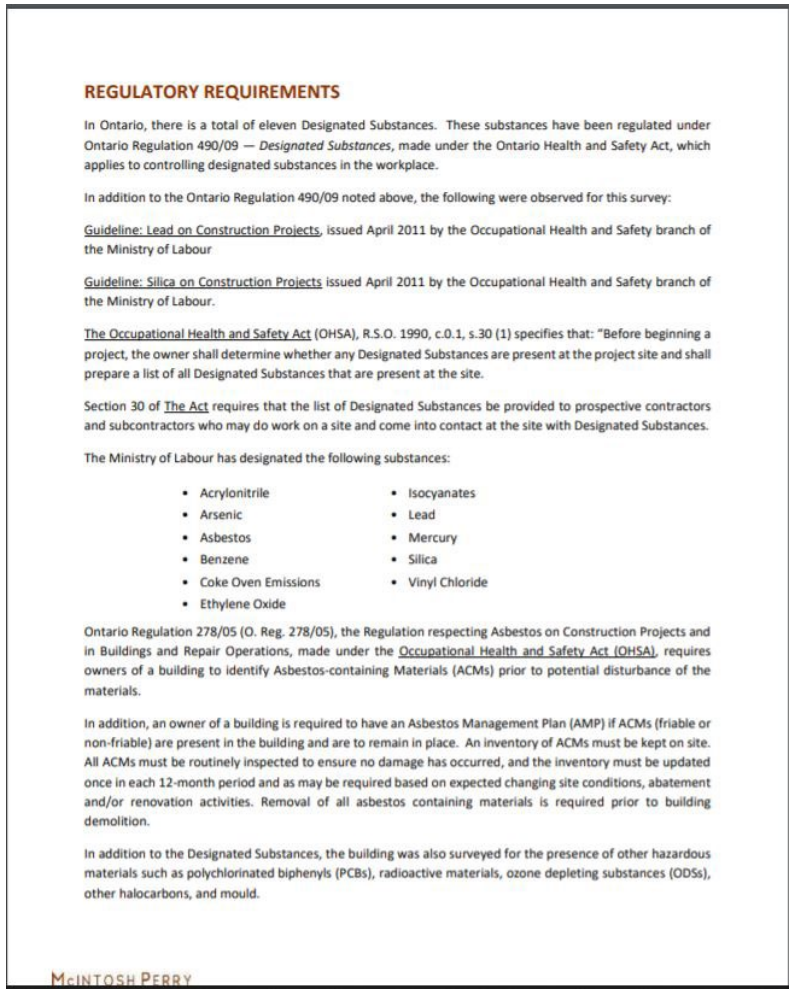
Section 4: Appendix A - Regulatory Requirements



REGULATORY REQUIREMENTS

In Ontario, there is a total of eleven Designated Substances. These substances have been regulated under Ontario Regulation 490/09 — *Designated Substances*, made under the Ontario Health and Safety Act, which applies to controlling designated substances in the workplace.

In addition to the Ontario Regulation 490/09 noted above, the following were observed for this survey:

Guideline: Lead on Construction Projects, issued April 2011 by the Occupational Health and Safety branch of the Ministry of Labour

Guideline: Silica on Construction Projects issued April 2011 by the Occupational Health and Safety branch of the Ministry of Labour.

The Occupational Health and Safety Act (OHSA), R.S.O. 1990, c.0.1, s.30 (1) specifies that: "Before beginning a project, the owner shall determine whether any Designated Substances are present at the project site and shall prepare a list of all Designated Substances that are present at the site.

Section 30 of The Act requires that the list of Designated Substances be provided to prospective contractors and subcontractors who may do work on a site and come into contact at the site with Designated Substances.

The Ministry of Labour has designated the following substances:

- Acrylonitrile
- Arsenic
- Asbestos
- Benzene
- Coke Oven Emissions
- Ethylene Oxide
- Isocyanates
- Lead
- Mercury
- Silica
- Vinyl Chloride

Ontario Regulation 278/05 (O. Reg. 278/05), the Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations, made under the Occupational Health and Safety Act (OHSA), requires owners of a building to identify Asbestos-containing Materials (ACMs) prior to potential disturbance of the materials.

In addition, an owner of a building is required to have an Asbestos Management Plan (AMP) if ACMs (friable or non-friable) are present in the building and are to remain in place. An inventory of ACMs must be kept on site. All ACMs must be routinely inspected to ensure no damage has occurred, and the inventory must be updated once in each 12-month period and as may be required based on expected changing site conditions, abatement and/or renovation activities. Removal of all asbestos containing materials is required prior to building demolition.

In addition to the Designated Substances, the building was also surveyed for the presence of other hazardous materials such as polychlorinated biphenyls (PCBs), radioactive materials, ozone depleting substances (ODSs), other halocarbons, and mould.

McINTOSH PERRY

This appendix details the regulations and guidelines used to assemble this DSR and conduct the sampling.

Please refer to O.Reg. 490/09 for information on designated substances and O.Reg. 278/05 for information about asbestos

Information value for worker:
LOW

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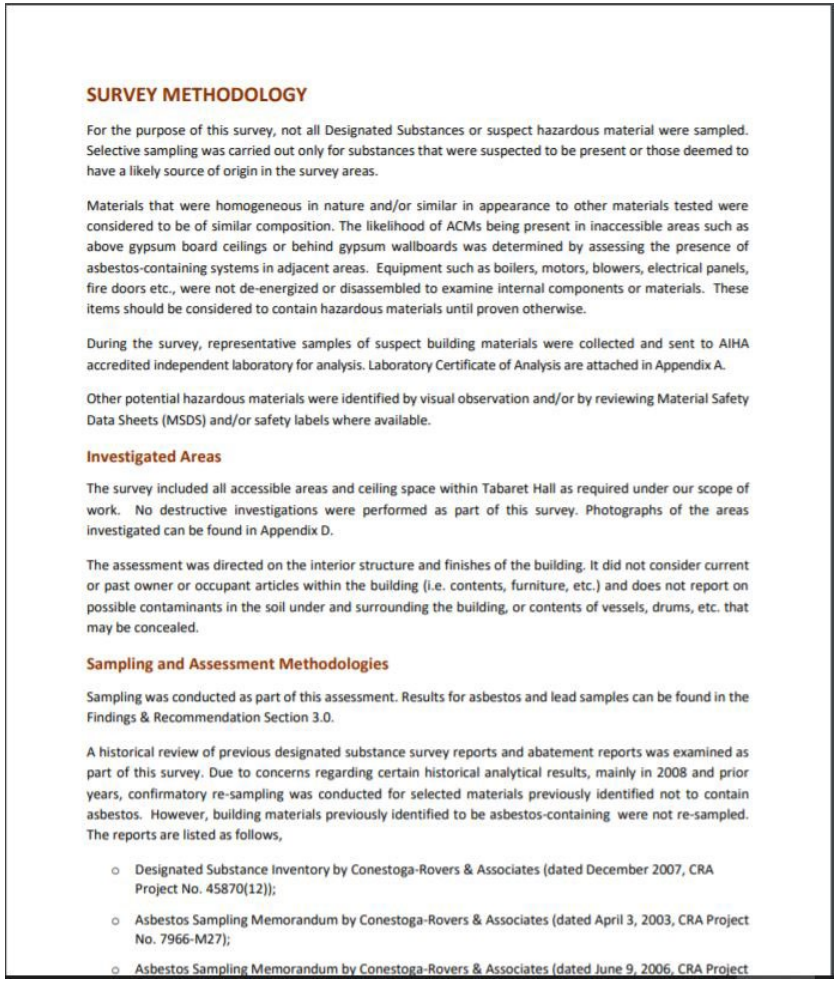
Section 4: Appendix B - Survey Methodology and Background Information



SURVEY METHODOLOGY

For the purpose of this survey, not all Designated Substances or suspect hazardous material were sampled. Selective sampling was carried out only for substances that were suspected to be present or those deemed to have a likely source of origin in the survey areas.

Materials that were homogeneous in nature and/or similar in appearance to other materials tested were considered to be of similar composition. The likelihood of ACMs being present in inaccessible areas such as above gypsum board ceilings or behind gypsum wallboards was determined by assessing the presence of asbestos-containing systems in adjacent areas. Equipment such as boilers, motors, blowers, electrical panels, fire doors etc., were not de-energized or disassembled to examine internal components or materials. These items should be considered to contain hazardous materials until proven otherwise.

During the survey, representative samples of suspect building materials were collected and sent to AIHA accredited independent laboratory for analysis. Laboratory Certificate of Analysis are attached in Appendix A.

Other potential hazardous materials were identified by visual observation and/or by reviewing Material Safety Data Sheets (MSDS) and/or safety labels where available.

Investigated Areas

The survey included all accessible areas and ceiling space within Tabaret Hall as required under our scope of work. No destructive investigations were performed as part of this survey. Photographs of the areas investigated can be found in Appendix D.

The assessment was directed on the interior structure and finishes of the building. It did not consider current or past owner or occupant articles within the building (i.e. contents, furniture, etc.) and does not report on possible contaminants in the soil under and surrounding the building, or contents of vessels, drums, etc. that may be concealed.

Sampling and Assessment Methodologies

Sampling was conducted as part of this assessment. Results for asbestos and lead samples can be found in the Findings & Recommendation Section 3.0.

A historical review of previous designated substance survey reports and abatement reports was examined as part of this survey. Due to concerns regarding certain historical analytical results, mainly in 2008 and prior years, confirmatory re-sampling was conducted for selected materials previously identified not to contain asbestos. However, building materials previously identified to be asbestos-containing were not re-sampled. The reports are listed as follows,

- Designated Substance Inventory by Conestoga-Rovers & Associates (dated December 2007, CRA Project No. 45870(12));
- Asbestos Sampling Memorandum by Conestoga-Rovers & Associates (dated April 3, 2003, CRA Project No. 7966-M27);
- Asbestos Sampling Memorandum by Conestoga-Rovers & Associates (dated June 9, 2006, CRA Project

This appendix deals with specific information on the different designated substances. It also outlines the minimum requirements for bulk sampling. It is a more technical section.

Information value for worker:
LOW

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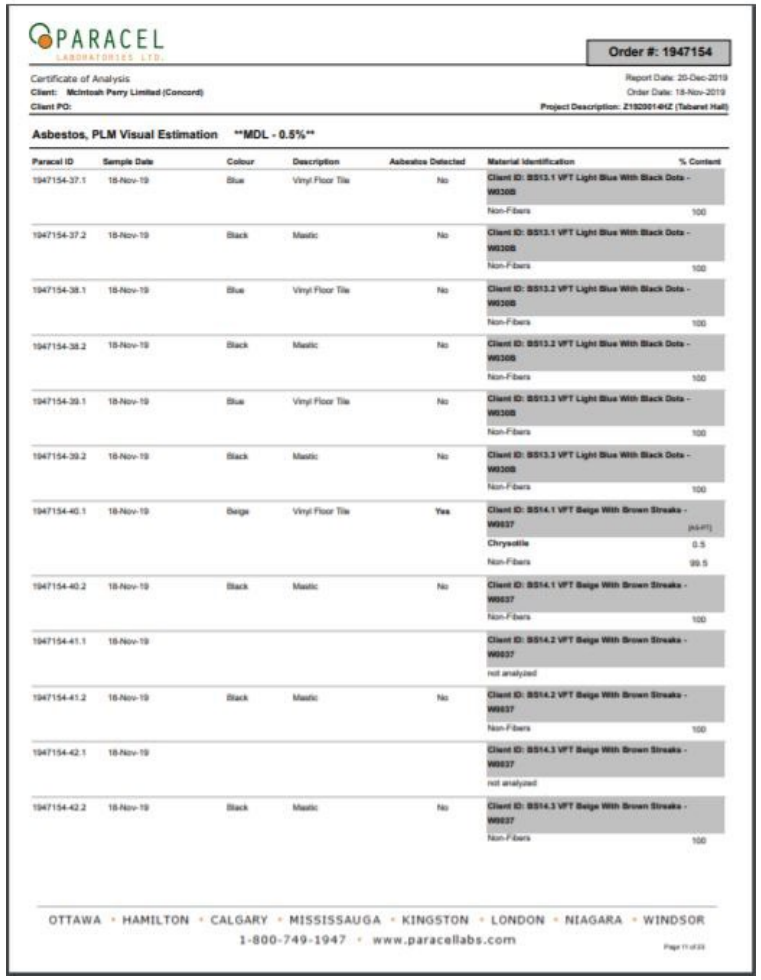
Section 4: Appendix C - Laboratory Analytical Reports



PARACEL LABORATORIES LTD.

Order #: 1947154

Certificate of Analysis
Client: McIntosh Perry Limited (Concord)
Client PO:

Report Date: 20-Dec-2019
Order Date: 18-Nov-2019
Project Description: Z192001-01Z (Tabaret Hall)

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

Paracel ID	Sample Date	Colour	Description	Asbestos Detected	Material Identification	% Content
1947154-37.1	18-Nov-19	Blue	Vinyl Floor Tile	No	Client ID: SS13.1 VFT Light Blue With Black Dots - W030B	
					Non-Fibers	100
1947154-37.2	18-Nov-19	Black	Mastic	No	Client ID: SS13.1 VFT Light Blue With Black Dots - W030B	
					Non-Fibers	100
1947154-38.1	18-Nov-19	Blue	Vinyl Floor Tile	No	Client ID: SS13.2 VFT Light Blue With Black Dots - W030B	
					Non-Fibers	100
1947154-38.2	18-Nov-19	Black	Mastic	No	Client ID: SS13.2 VFT Light Blue With Black Dots - W030B	
					Non-Fibers	100
1947154-39.1	18-Nov-19	Blue	Vinyl Floor Tile	No	Client ID: SS13.3 VFT Light Blue With Black Dots - W030B	
					Non-Fibers	100
1947154-39.2	18-Nov-19	Black	Mastic	No	Client ID: SS13.3 VFT Light Blue With Black Dots - W030B	
					Non-Fibers	100
1947154-40.1	18-Nov-19	Beige	Vinyl Floor Tile	Yes	Client ID: SS14.1 VFT Beige With Brown Streaks - W0037	
					Chrysotile	0.5
					Non-Fibers	99.5
1947154-40.2	18-Nov-19	Black	Mastic	No	Client ID: SS14.1 VFT Beige With Brown Streaks - W0037	
					Non-Fibers	100
1947154-41.1	18-Nov-19				Client ID: SS14.2 VFT Beige With Brown Streaks - W0037	
					not analyzed	
1947154-41.2	18-Nov-19	Black	Mastic	No	Client ID: SS14.2 VFT Beige With Brown Streaks - W0037	
					Non-Fibers	100
1947154-42.1	18-Nov-19				Client ID: SS14.3 VFT Beige With Brown Streaks - W0037	
					not analyzed	
1947154-42.2	18-Nov-19	Black	Mastic	No	Client ID: SS14.3 VFT Beige With Brown Streaks - W0037	
					Non-Fibers	100

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1-800-749-1947 • www.paracellabs.com

This section contains the lab reports for the samples that were tested. It is a more technical portion and does not have any usable information for the average worker.

Information value for worker:
LOW

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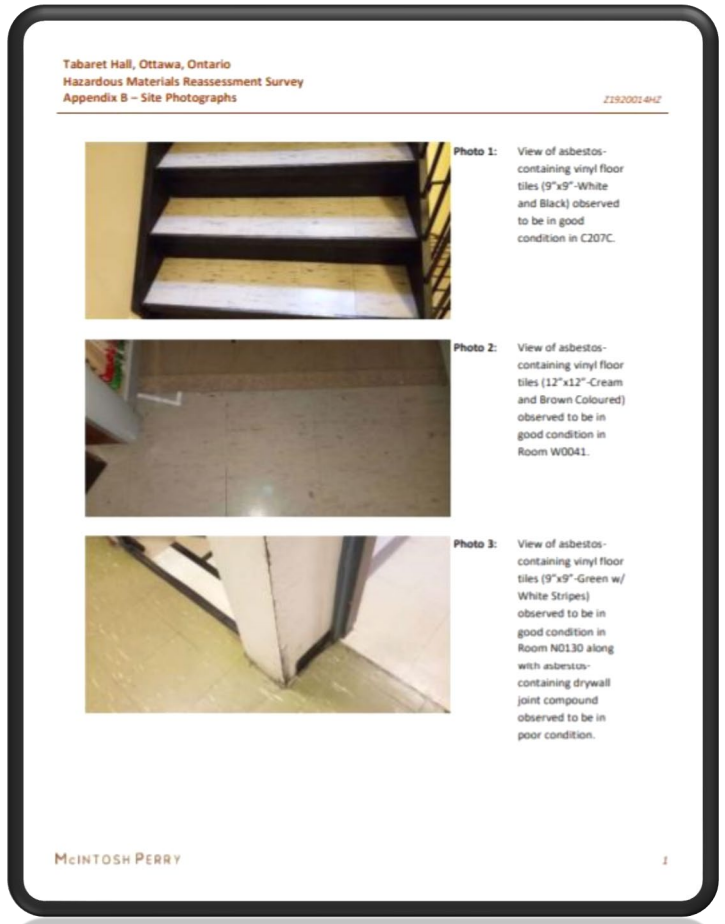
Section 4: Appendix D - Site Photographs



Tabaret Hall, Ottawa, Ontario
Hazardous Materials Reassessment Survey
Appendix B – Site Photographs
Z1920014HZ

Photo 1: View of asbestos-containing vinyl floor tiles (9"x9"-White and Black) observed to be in good condition in C207C.

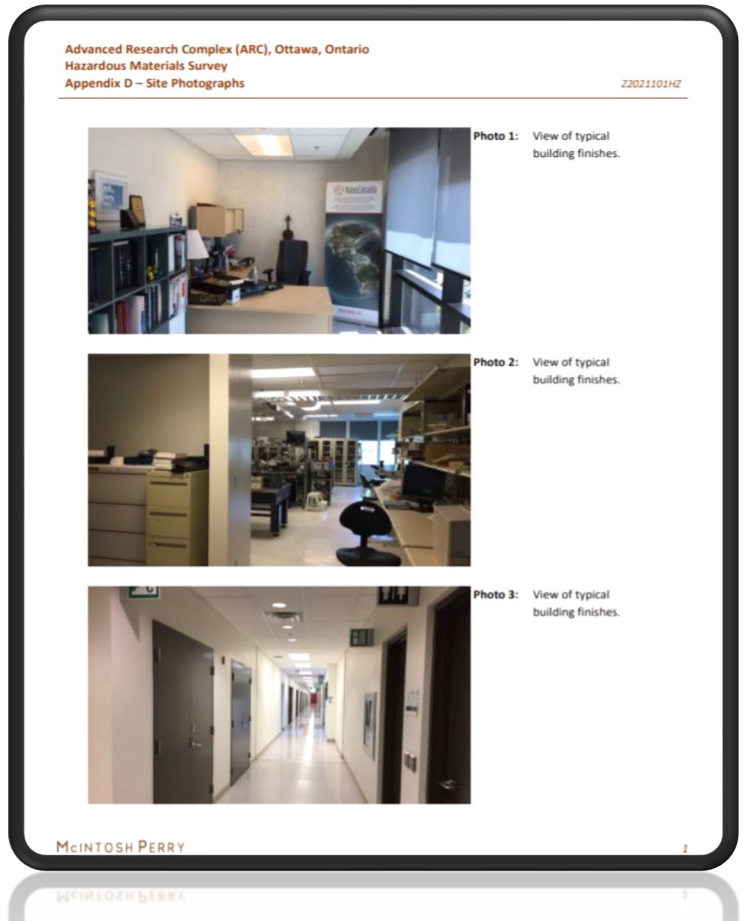
Photo 2: View of asbestos-containing vinyl floor tiles (12"x12"-Cream and Brown Coloured) observed to be in good condition in Room W0041.

Photo 3: View of asbestos-containing vinyl floor tiles (9"x9"-Green w/ White Stripes) observed to be in good condition in Room N0130 along with asbestos-containing drywall joint compound observed to be in poor condition.

McINTOSH PERRY 1

This is where you can find pictures of the different materials sampled and their condition. This can be a very useful tool to get a visual idea of the material.

Information value for worker:
Medium



Advanced Research Complex (ARC), Ottawa, Ontario
Hazardous Materials Survey
Appendix D – Site Photographs
Z2021101HZ

Photo 1: View of typical building finishes.

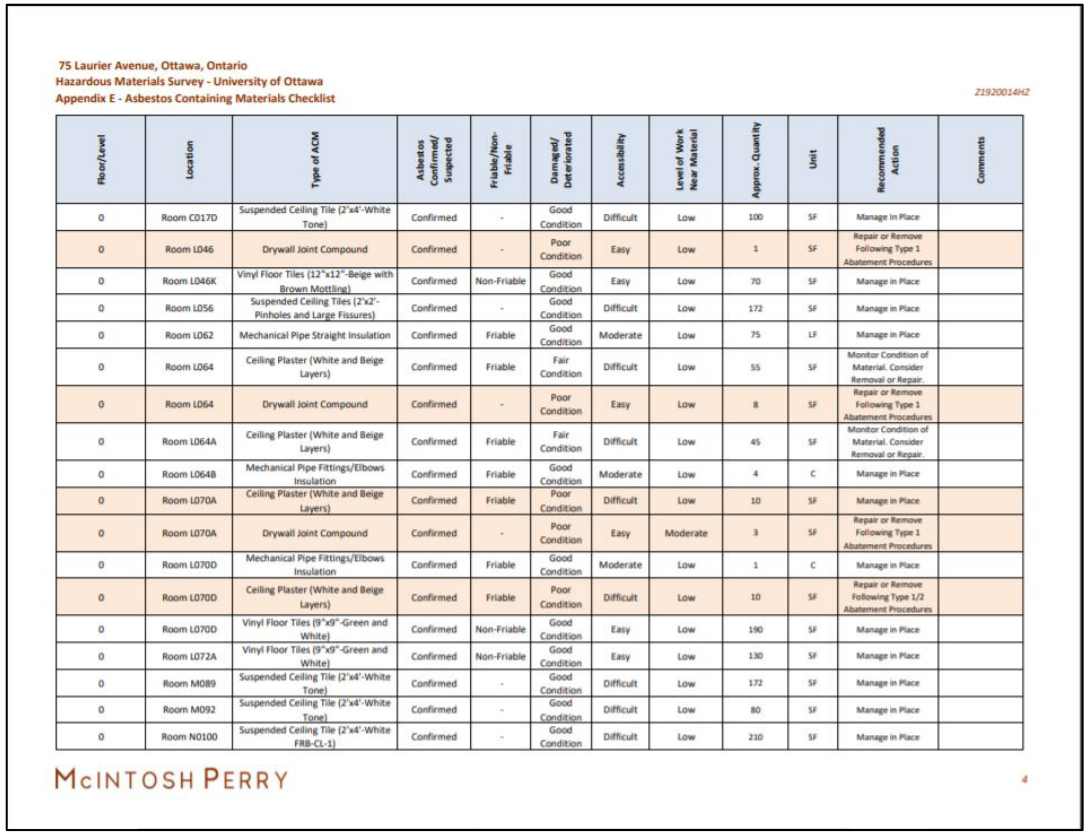
Photo 2: View of typical building finishes.

Photo 3: View of typical building finishes.

McINTOSH PERRY 1

uOttawa

Section 4: Appendix E - Asbestos Containing Materials Checklist



75 Laurier Avenue, Ottawa, Ontario
Hazardous Materials Survey - University of Ottawa
Appendix E - Asbestos Containing Materials Checklist

Z1920014HZ

Floor/Level	Location	Type of ACM	Asbestos Confirmed/ Suspected	Friable/Non-Friable	Damaged/ Deteriorated	Accessibility	Level of Work Near Material	Approx. Quantity	Unit	Recommended Action	Comments
0	Room C017D	Suspended Ceiling Tile (2'x4'-White Tone)	Confirmed	-	Good Condition	Difficult	Low	100	SF	Manage In Place	
0	Room L046	Drywall Joint Compound	Confirmed	-	Poor Condition	Easy	Low	1	SF	Repair or Remove Following Type 1 Abatement Procedures	
0	Room L046K	Vinyl Floor Tiles (12"x12"-Beige with Brown Mottling)	Confirmed	Non-Friable	Good Condition	Easy	Low	70	SF	Manage in Place	
0	Room L056	Suspended Ceiling Tiles (2'x2'-Pinholes and Large Fissures)	Confirmed	-	Good Condition	Difficult	Low	172	SF	Manage in Place	
0	Room L062	Mechanical Pipe Straight Insulation	Confirmed	Friable	Good Condition	Moderate	Low	75	LF	Manage in Place	
0	Room L064	Ceiling Plaster (White and Beige Layers)	Confirmed	Friable	Fair Condition	Difficult	Low	55	SF	Monitor Condition of Material. Consider Removal or Repair.	
0	Room L064	Drywall Joint Compound	Confirmed	-	Poor Condition	Easy	Low	8	SF	Repair or Remove Following Type 1 Abatement Procedures	
0	Room L064A	Ceiling Plaster (White and Beige Layers)	Confirmed	Friable	Fair Condition	Difficult	Low	45	SF	Monitor Condition of Material. Consider Removal or Repair.	
0	Room L064B	Mechanical Pipe Fittings/Elbows Insulation	Confirmed	Friable	Good Condition	Moderate	Low	4	C	Manage in Place	
0	Room L070A	Ceiling Plaster (White and Beige Layers)	Confirmed	Friable	Poor Condition	Difficult	Low	10	SF	Manage in Place	
0	Room L070A	Drywall Joint Compound	Confirmed	-	Poor Condition	Easy	Moderate	3	SF	Repair or Remove Following Type 1 Abatement Procedures	
0	Room L070D	Mechanical Pipe Fittings/Elbows Insulation	Confirmed	Friable	Good Condition	Moderate	Low	1	C	Manage in Place	
0	Room L070D	Ceiling Plaster (White and Beige Layers)	Confirmed	Friable	Poor Condition	Difficult	Low	10	SF	Repair or Remove Following Type 1/2 Abatement Procedures	
0	Room L070D	Vinyl Floor Tiles (9"x9"-Green and White)	Confirmed	Non-Friable	Good Condition	Easy	Low	190	SF	Manage in Place	
0	Room L072A	Vinyl Floor Tiles (9"x9"-Green and White)	Confirmed	Non-Friable	Good Condition	Easy	Low	130	SF	Manage in Place	
0	Room M089	Suspended Ceiling Tile (2'x4'-White Tone)	Confirmed	-	Good Condition	Difficult	Low	172	SF	Manage in Place	
0	Room M092	Suspended Ceiling Tile (2'x4'-White Tone)	Confirmed	-	Good Condition	Difficult	Low	80	SF	Manage in Place	
0	Room N0100	Suspended Ceiling Tile (2'x4'-White FRB-CL-1)	Confirmed	-	Good Condition	Difficult	Low	210	SF	Manage in Place	

McINTOSH PERRY

4

This section contains a comprehensive table of all the sampling results, their conditions, recommended action, and more. This appendix deals solely with asbestos

Information value for worker:
Medium

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Section 4: Appendix E - Explanation of Information in the Asbestos Containing Materials Checklist

- ✓ ***Floor/Level***: floor or level where the ACM sample was taken
- ✓ ***Room***: specific room from which the ACM test was retrieved
- ✓ ***ID*****:** testing sample ID
- ✓ ***Type of ACM***: Description of material sampled (what was sampled)
- ✓ ***Description***: quick physical description of material sampled (what it looks like)
- ✓ ***Asbestos conf/sus***: whether ACM has been confirmed or is suspected (no samples taken but treat as confirmed)
- ✓ ***Friable/non***: physical characteristic of ACM material
- ✓ ***Damaged/Deterioration***: condition of ACM material (good, fair, poor)
- ✓ ***Accessibility***: Ease of access/ removal of ACM material (e.g. Plaster ceiling over duct work)
- ✓ ***Level of work near material***: likelihood of material being disturbed by occupants
- ✓ ***Approximate quantity***: Number representing the approximate amount of material present
- ✓ ***Unit***: measurement unit used, i.e., square feet, linear feet
- ✓ ***Recommended action***: how to deal with ACM
- ✓ **Estimated Abatement Cost:** Not always present in table; this is a remediation estimate
- ✓ ***Comments***: general comments about the specific ACM, things to watch for

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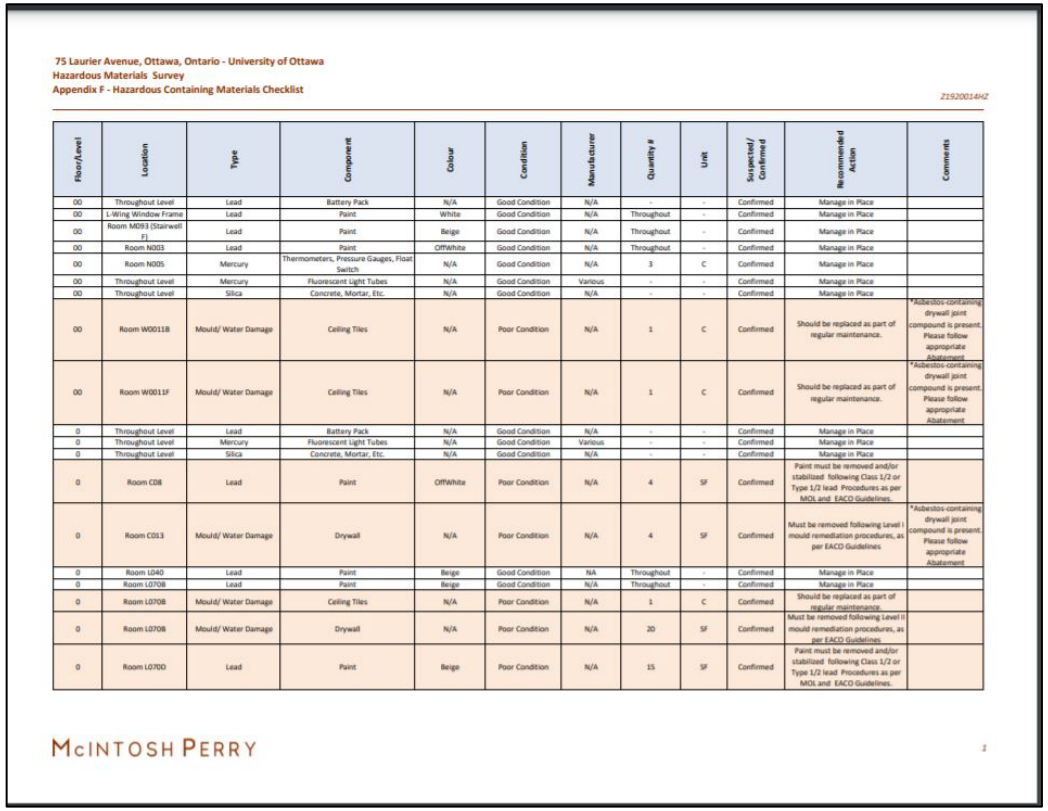
Section 4: Appendix F - Hazardous Materials Checklist



75 Laurier Avenue, Ottawa, Ontario - University of Ottawa
Hazardous Materials Survey
Appendix F - Hazardous Containing Materials Checklist

Z1920014HZ

Floor/Level	Location	Type	Component	Colour	Condition	Manufacturer	Quantity #	Unit	Suspected / Confirmed	Recommended Action	Comments
00	Throughout Level	Lead	Battery Pack	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
00	L-Wing Window Frame	Lead	Paint	White	Good Condition	N/A	Throughout	-	Confirmed	Manage in Place	
00	Room M093 (Stairwell F)	Lead	Paint	Beige	Good Condition	N/A	Throughout	-	Confirmed	Manage in Place	
00	Room N003	Lead	Paint	OffWhite	Good Condition	N/A	Throughout	-	Confirmed	Manage in Place	
00	Room N005	Mercury	Thermometers, Pressure Gauges, Float Switch	N/A	Good Condition	N/A	3	C	Confirmed	Manage in Place	
00	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	Good Condition	Various	-	-	Confirmed	Manage in Place	
00	Throughout Level	Silica	Concrete, Mortar, Etc.	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
00	Room W0011B	Mould/ Water Damage	Ceiling Tiles	N/A	Poor Condition	N/A	1	C	Confirmed	Should be replaced as part of regular maintenance.	*Asbestos-containing drywall joint compound is present. Please follow appropriate Abatement
00	Room W011F	Mould/ Water Damage	Ceiling Tiles	N/A	Poor Condition	N/A	1	C	Confirmed	Should be replaced as part of regular maintenance.	*Asbestos-containing drywall joint compound is present. Please follow appropriate Abatement
0	Throughout Level	Lead	Battery Pack	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
0	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	Good Condition	Various	-	-	Confirmed	Manage in Place	
0	Throughout Level	Silica	Concrete, Mortar, Etc.	N/A	Good Condition	N/A	-	-	Confirmed	Manage in Place	
0	Room C08	Lead	Paint	OffWhite	Poor Condition	N/A	4	SF	Confirmed	Paint must be removed and/or stabilized following Class 1/2 or Type 1/2 lead Procedures as per MOL and EACO Guidelines.	
0	Room C013	Mould/ Water Damage	Drywall	N/A	Poor Condition	N/A	4	SF	Confirmed	Must be removed following Level I mould remediation procedures, as per EACO Guidelines	*Asbestos-containing drywall joint compound is present. Please follow appropriate Abatement
0	Room L040	Lead	Paint	Beige	Good Condition	NA	Throughout	-	Confirmed	Manage in Place	
0	Room L070B	Lead	Paint	Beige	Good Condition	N/A	Throughout	-	Confirmed	Manage in Place	
0	Room L070B	Mould/ Water Damage	Ceiling Tiles	N/A	Poor Condition	N/A	1	C	Confirmed	Should be replaced as part of regular maintenance.	
0	Room L070B	Mould/ Water Damage	Drywall	N/A	Poor Condition	N/A	20	SF	Confirmed	Must be removed following Level II mould remediation procedures, as per EACO Guidelines	
0	Room L070D	Lead	Paint	Beige	Poor Condition	N/A	15	SF	Confirmed	Paint must be removed and/or stabilized following Class 1/2 or Type 1/2 lead Procedures as per MOL and EACO Guidelines.	

McINTOSH PERRY

Appendix F contains a table similar to the one in Appendix E; however, this one lists all the different designated substances found, other than asbestos.

Information value for worker:
Medium

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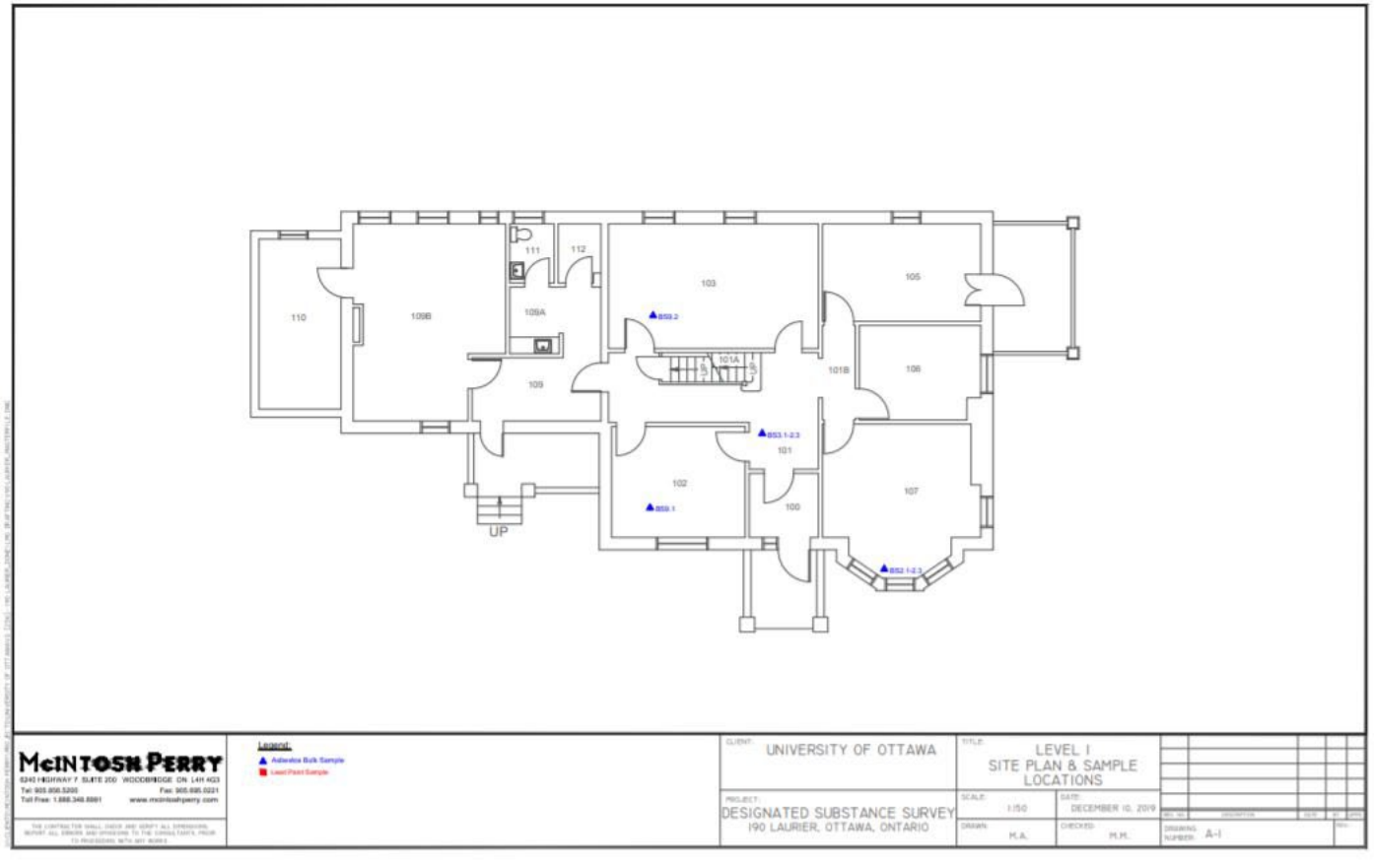
Section 4: Appendix G - Site Sampling and Location Plans



This final appendix details the specific places where site samples were taken to complete this DSR report. **Please note** that just because a sample wasn't taken in a given room **doesn't mean that the room in question does not contain ACM**. The same material, such as ceiling tiles, may be found in multiple locations. Note that materials identified in checklist E as asbestos containing are represented on these floor plans and can be great for a quick reference.

Information value for worker:
LOW

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Things to remember

- Table A in the Executive Summary is the best way to quickly check for ACM found in building.
- **Do not just rely** on the sampling map. Pay attention to the legend and notes.
- **Throughout building** means all the same materials are known to contain ACM
- **Specific areas** means that ACM was identified in select locations. You need to test other material you will be working with BEFORE starting work or assume and treat it as if it DOES contain ACM.
- **DSR reports have their limitations**, a site-specific DSR should always be done prior to the start of a renovation/demolition project. The DSR identifies only what is visible and accessible.
- A **stop positive result** means the material DOES contain an ACM
- If the building was built or standing between 1930 and 1990, ACM is possibly present.
- Asbestos products in good condition pose NO immediate health concerns to occupants.
- Here is a quick reference guide of the campus DSR (clicking this link will automatically download an excel spreadsheet to your desktop)

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Designated Substances Reports – How to Interpret Data

>> Confirm your review and comprehension of this presentation on designated substance reports <<

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