HAZARDOUS MATERIALS SURVEY AND 2023 REASSESSMENT 30 MARIE CURIE PRIVATE (BIOSCIENCE-PH II), OTTAWA, ON

Project No.:0Z2021101HZ / CCC-230252-00

Prepared for:

University of Ottawa

Prepared by:

McIntosh Perry Limited (MPL)

MPL Contact:

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Date:

November 28, 2023

McINTOSH PERRY

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REASSESSMENT SURVEY 2023

McIntosh Perry Limited **(MPL)** was retained by the University of Ottawa to complete a hazardous materials survey of Bioscience-Ph II located at 30 Marie-Curie Private. The original hazardous material survey was conducted on June 5th, 2020. **The reassessment survey was conducted on September 15th, 2023.**

The purpose of the reassessment was to evaluate the condition and quantity of previously reported asbestos-containing materials (ACM) and develop corrective action plans as required for the purposes of long-term management.

The assessment and reassessment determined the following findings and recommendations.

Summary of the Reassessment Findings:

- No mould or water-damaged materials were observed during the site survey.

Summary of Recommendations:

- Perform a reassessment of asbestos materials on an annual basis.
- Perform a pre-construction assessment and remove all asbestos-containing materials (ACM) prior to alterations or maintenance work if ACM may be disturbed by the work.
- Follow appropriate safe work procedures when handling or disturbing asbestos.

Sample any presumed ACM prior to alteration or maintained work if presumed ACM may be disturbed by the work.

EXECUTIVE SUMMARY

McIntosh Perry Limited **(MPL)** was retained by the University of Ottawa to complete a hazardous materials survey for Bioscience-Ph II located at 30 Marie-Curie Private. The original hazardous material survey was conducted on June 5th, 2020. **The reassessment survey was conducted on September 15th, 2023.**

The survey aimed 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.

Based on the assessment conducted by MPL, the following asbestos-containing materials (ACMs) were identified or suspected to be present in the building:

Table A: Summary of Asbestos-Containing Materials Identified

Material Description	Location	Type of Asbestos	Friable?
Fire Doors	Specific Areas Only	Suspected	-
Concrete Block Mortar	Specific Areas Only	Suspected	-
Ceramic Wall/Floor Tile Grout	Specific Areas Only	Suspected	-
Roofing Materials	Roof Level	Suspected	-

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

All repairs or removal of ACMs 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 ACMs should be informed of their presence;

Given that ACMs have been identified and will likely remain in place, an Asbestos Management Plan is required, and an ACMs inventory must be kept on site. All ACMs must be routinely inspected to ensure no damage has occurred, and the inventory must be updated once every 12 months 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 were identified or suspected to be present in the building:

Table B: Summary of Designated Substances & Hazardous Materials Identified

Material Description	Location
Lead Acid Batteries	Specific Equipment
Ozone Depleting Substances	Specific Equipment
Mercury Vapour	Specific Equipment
Silica	Throughout Building
Water Damage	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 involve disturbance of the materials mentioned above:

- 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 Canada (EACC) Lead Abatement Guidelines.

Prior to any renovations or demolition activities within the building, designated substances 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.

This report should be made available to contractors tendering on any renovation or demolition work. In turn, all contractors requesting tenders from subcontractors shall furnish this report to subcontractors.

This executive summary is not to be used alone. This report should be reviewed in its entirety.

November 28, 2023

University of Ottawa
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Ottawa, Ontario
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via email: martine.bergeron@uottawa.ca

Attention: Martine Bergeron, Senior Specialist, Occupational Health and Safety

Re: 30 Marie-Curie Private (CAREG), Ottawa, ON
Hazardous Materials Survey and 2023 Reassessment
McIntosh Perry Limited Reference No. Z2021101HZ / CCC-230252-00

1.0 INTRODUCTION

Under your instructions, McIntosh Perry Limited (MPL) conducted a Hazardous Materials Survey and 2023 Reassessment at Bioscience-Ph II located at 30 Marie-Curie Private. The site is situated on the southwest corner of Louis Pasteur Private and Somerset Street East. The original hazardous material survey was conducted on June 5th, 2020. **The Reassessment Survey was conducted on September 15th, 2023.**

The survey aimed 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 (ODS), 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.

2.0 PROPERTY DESCRIPTION

The subject building is a five-storey institutional building built in 2004 and approximately 82,300 square feet. The subject building was observed to be constructed with a concrete and concrete block foundation. The exterior walls are finished with brick and a built-up flat roof. Throughout the subject building, interior walls were observed to be concrete block and drywall, and ceilings were observed to be mainly ceiling tiles and drywall. The floors were generally vinyl floor tile and ceramic tiles.

3.0 FINDINGS & RECOMMENDATIONS

Designated Substances

3.1 Asbestos

Findings

Forty-three (43) bulk samples were previously collected during the hazardous material 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.

The 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 1.1	Room 512B	VFT (12” x 12”- Light & Dark Grey Mix)	None Detected	N/A
BS 1.2	Room 512B	VFT (12” x 12”- Light & Dark Grey Mix)	None Detected	N/A
BS 1.3	Room 512B	VFT (12” x 12”- Light & Dark Grey Mix)	None Detected	N/A
BS 2.1	Room 505	Cementitious Coating (Grey)	None Detected	N/A
BS 2.2	Room 505	Cementitious Coating (Grey)	None Detected	N/A
BS 2.3	Room 505	Cementitious Coating (Grey)	None Detected	N/A
BS 3.1	Room 131	VFT (12” x 12”- Dark Grey w/ White & Grey Flakes)	None Detected	N/A
		Mastic (Black)	None Detected	N/A
BS 3.2	Room 131	VFT (12” x 12”- Dark Grey w/ White & Grey Flakes)	None Detected	N/A
		Mastic (Black)	None Detected	N/A
BS 3.3	Room 140	VFT (12” x 12”- Dark Grey w/ White & Grey Flakes)	None Detected	N/A
		Mastic (Black)	None Detected	N/A
BS 4.1	Room 108	VFT (12” x 12”- Black w/ White Flakes)	None Detected	N/A
		Mastic (Black)	None Detected	N/A
BS 4.2	Room 108	VFT (12” x 12”- Black w/ White Flakes)	None Detected	N/A

Sample ID	Location	Material	Type and Content	Friability
		Mastic (Black)	None Detected	N/A
BS 4.3	Room 108	VFT (12" x 12"- Black w/ White Flakes)	None Detected	N/A
		Mastic (Black)	None Detected	N/A
BS 5.1	Room 106	VFT (12" x 12"- Light Grey w/ White & Grey Flakes)	None Detected	N/A
		Mastic (Black)	None Detected	N/A
BS 5.2	Room 106	VFT (12" x 12"- Light Grey w/ White & Grey Flakes)	None Detected	N/A
		Mastic (Black)	None Detected	N/A
BS 5.3	Room 106	VFT (12" x 12"- Light Grey w/ White & Grey Flakes)	None Detected	N/A
		Mastic (Black)	None Detected	N/A
BS 6.1	Room 133	Firestop Caulking (Red)	None Detected	N/A
BS 6.2	Room 133	Firestop Caulking (Red)	None Detected	N/A
BS 6.3	Room 133	Firestop Caulking (Red)	None Detected	N/A
BS 7.1	Room 411	Drywall Joint Compound	None Detected	N/A
BS 7.2	Room 421	Drywall Joint Compound	None Detected	N/A
BS 7.3	Room 522	Drywall Joint Compound	None Detected	N/A
BS 7.4	Room 521	Drywall Joint Compound	None Detected	N/A
BS 7.5	Room 121	Drywall Joint Compound	None Detected	N/A
BS 7.6	Room 009	Drywall Joint Compound	None Detected	N/A
BS 7.7	Room 009	Drywall Joint Compound	None Detected	N/A
BS 8.1	Room 001	Wall Texture Coat (White)	None Detected	N/A
BS 8.2	Room 001	Wall Texture Coat (White)	None Detected	N/A
BS 8.3	Room 001	Wall Texture Coat (White)	None Detected	N/A
BS 9.1	Room 323	VFT (12" x 12"- Beige w/ White & Brown Flakes)	None Detected	N/A
		Mastic (Black)	None Detected	N/A
BS 9.2	Room 323	VFT (12" x 12"- Beige w/ White & Brown Flakes)	None Detected	N/A
		Mastic (Black)	None Detected	N/A
BS 9.3	Room 323	VFT (12" x 12"- Beige w/ White & Brown Flakes)	None Detected	N/A
		Mastic (Black)	None Detected	N/A

N/A – Not Applicable
VFT – Vinyl Floor Tiles
Stop Positive – Material considered to be asbestos-containing as per O. Reg. 278/05.

Please refer to Appendix E – Asbestos-Containing Materials Checklist for material conditions, quantities (where applicable), and recommended actions.

The following building materials (if present) were investigated for asbestos content:

3.1.1 Fireproofing

No fireproofing was observed throughout the subject building.

3.1.2 Mechanical Pipe Insulation

3.1.2.1 Mechanical Pipe Straight Insulation

Mechanical pipe straight insulation was observed throughout the subject building. MPL made several incisions throughout to investigate its composition, and it was visually identified as fibreglass and, therefore, not suspected of containing asbestos.

3.1.2.2 Mechanical Piping Elbows/Fittings Insulation

Mechanical pipe elbows/fittings insulation was observed throughout the subject building. MPL made several incisions throughout to investigate its composition, and it was visually identified as fibreglass and, therefore, not suspected of containing asbestos.

3.1.2.3 Mechanical Piping Hangers Insulation

Mechanical pipe hanger insulation was observed throughout the subject building. MPL made several incisions throughout to investigate its composition, and it was visually identified as fibreglass and, therefore, not suspected of containing asbestos.

3.1.2.4 HVAC Duct Insulation

No HVAC duct insulation was observed throughout the subject building.

3.1.3 Flexible Duct Connector

No flexible duct connectors were observed throughout the subject building.

3.1.4 Heat Shield or Heat Shield Insulation

No potential asbestos-containing heat shield insulation was observed throughout the subject building.

3.1.5 Texture Finishes

Wall texture coat (White) was observed and previously sampled in Room 001. The laboratory analytical results indicate that this material does not contain asbestos.

3.1.6 Plaster

No plaster finishes were observed throughout the subject building.

3.1.7 Drywall Joint Compound

Drywall joint compounds were observed and previously sampled throughout the building. The laboratory analytical results of the samples collected from Rooms 009, 121, 411, 421, 521, and 522 indicate that this material does not contain asbestos.

3.1.8 Ceiling Tiles

Suspended ceiling tiles (2'x4' – Pinholes) were observed throughout the subject building. The date stamp indicated that this material was manufactured in 2009 and, therefore, not suspected of containing asbestos.

3.1.9 Vinyl Floor Tiles

Several different types of vinyl floor tiles were previously identified and sampled throughout the subject building as follows:

- Vinyl floor tiles (12" x 12" – Light & Dark Grey Mix) were observed and previously sampled in Room 512B. The analytical results of the samples collected in the laboratory indicate that this material does not contain asbestos.
- Vinyl floor tiles (12" x 12" – Dark Grey w/ White & Grey Flakes) were observed and previously sampled in Rooms 131 and 140. The laboratory analytical results indicate that this material does not contain asbestos. The associated mastic (Black) was also determined not to contain asbestos.
- Vinyl floor tiles (12" x 12" – Black w/ White Flakes) were observed and previously sampled in Room 108. The analytical results of the samples collected in the laboratory indicate that this material does not contain asbestos. The associated mastic (Black) was also determined not to contain asbestos.
- Vinyl floor tiles (12" x 12" – Light Grey w/ White & Grey Flakes) were observed and previously sampled in Room 106. The analytical results of the samples collected in the laboratory indicate that this material does not contain asbestos. The associated mastic (Black) was also determined not to contain asbestos.
- Vinyl floor tiles (12" x 12" – Beige w/ White & Brown Flakes) were observed and previously sampled in Room 323. The analytical results of the samples collected in the laboratory indicate that this material does not contain asbestos. The associated mastic (Black) was also determined not to contain asbestos.

3.1.10 Vinyl Sheet Flooring

No Vinyl Sheet Flooring was observed throughout the subject building.

3.1.11 Brick/Stone Mortar

No brick/stone mortar was observed throughout the subject building.

3.1.12 Concrete Block Mortar

To avoid damage and compromising the structure's integrity, no bulk samples of the concrete block mortar were collected. Prior to any renovation or demolition, concrete block mortar should be examined and tested for asbestos content. Concrete block mortar should, therefore, be considered to contain asbestos until bulk samples and analysis are proven otherwise.

3.1.13 Ceramic Wall / Floor Tile Grout

No bulk samples of the ceramic wall/floor tile grout were collected to avoid damage and compromise the structure's integrity. Prior to any renovation or demolition, the ceramic wall/floor tile grout should be examined and tested for asbestos content. Ceramic wall/floor tile grout should, therefore, be considered to contain asbestos until bulk samples and analysis until proven otherwise.

3.1.14 Transite (Asbestos Cement)

No transite materials were observed throughout the subject building.

3.1.15 Caulking

Firestop caulking (Red) was observed and previously sampled in Room 133. The analytical results of the samples collected in the laboratory indicate that this material does not contain asbestos.

3.1.16 Mastic

No other mastic materials were observed throughout the subject building.

3.1.17 Cementitious Coating

Cementitious wall coating was observed and sampled in Room 505. The laboratory analytical results indicate that this material does not contain asbestos.

3.1.18 Fire Doors

Fire doors were observed at various locations throughout the subject building. No bulk samples of the internal door insulation materials were collected to avoid possible damage. Prior to removal and/or replacement, fire doors should be examined and tested for asbestos content. Fire doors should be considered to contain asbestos until bulk samples and analysis until proven otherwise. All fire doors were observed to be in good condition.

3.1.19 Roofing Material

To avoid damage and compromising the integrity of the roofing material, no bulk samples of the roofing materials were collected. Prior to removal and/or replacement, roofing materials should be examined and tested for asbestos content. Roofing materials should be considered to contain asbestos until bulk samples and analysis until proven otherwise.

Recommendations

- Please refer to Appendix E – Asbestos-Containing Materials Checklist for material conditions, quantities (where applicable), and recommended actions;
- Prior to any renovation or demolition of materials which are assumed to be asbestos-containing (suspect materials which were not sampled, i.e., concrete block mortar, ceramic wall/floor tile grout, roofing materials, and fire doors), these materials must either be tested for asbestos content or

removed following appropriate asbestos abatement work procedures (Type 1/2/3) as detailed in O. Reg. 278/05 and disposed of as asbestos waste under O. Reg. 347;

- All repairs or removal of ACMs 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 ACMs should be informed of their presence and

- Given that ACMs have been identified and will likely remain in place, an Asbestos Management Plan is required, and an ACMs inventory must be kept on site. All ACMs must be routinely inspected to ensure no damage has occurred, and the inventory must be updated once every 12 months and as required based on expected changing site conditions, abatement and/or renovation activities.

3.2 Lead

Findings

3.2.1 Paint Finishes

Eight (8) paint samples from the subject building were previously collected and analyzed for lead content. Results of bulk sampling testing are summarized in Table 2, and the Laboratory Certificate of Analysis can be found in Appendix C.

Table 2:

Lead Sampling Locations and Laboratory Results

Sample I.D.	Location	Material	Colour	Lead Concentration Weight by Conc. (%)
Pb 1	Room 121	Wall Paint	Grey	0.0089
Pb 2	Room 021	Floor Paint	Grey	0.011
Pb 3	Room 521	Wall Paint	Blue	<0.022
Pb 4	Room 018	Wall Paint	Green	0.030
Pb 5	Room 021	Floor Paint	Pink	0.016
Pb 6	Room 421	Wall Paint	White	<0.0082
Pb 7	Room 221	Wall Paint	Brown	<0.025
Pb 8	Room 221	Wall Paint	Blue	<0.011

The paint finishes highlighted in blue in the above table were determined to contain low lead concentrations, less than or equal to 0.1%. These paint finishes were observed to be in good condition.

All other paints tested were below the laboratory limit of detection for lead. However, paints throughout the subject building that are not mentioned in this report must be considered to be lead-containing unless confirmed by sampling and analysis.

3.2.2 Battery Packs

Lead-containing acid battery packs were observed in Rooms 001, 133, 234, 433, 505, 528, 529, and 530.

Lead may also be present in the following materials in the building:

- Solder used on copper domestic water lines;
- Solder used in bell fittings for cast iron pipes;
- Solder used in electrical equipment;
- Ceramic tile glaze; and
- Concrete and mortar products, etc.

Recommendations

Paints identified to contain lead that are in good condition and do not pose a risk to workers or occupants can be managed in place.

Detailed worker protection protocols are outlined in the OMOL Guideline "Lead on Construction Projects" dated April 2011. Generally, removing the lead-based paint using a chemical gel or paste or a power tool equipped with a HEPA filter is considered a Type 1 operation. Removing lead-based paint by scraping or sanding using non-powered hand tools is considered a Type 2 operation. Removing lead-based paint using abrasive blasting or power tools without a HEPA filter is considered a Type 3 operation and requires the most stringent worker protection protocols (similar to asbestos). Furthermore, high-temperature welding would also require Type 3 Operations under the Guideline for Lead on Construction Projects. If this type of work is required, it may be prudent to chemically remove the lead paint in selected locations prior to performing any high temperature cutting or welding.

All removed lead materials must follow the Ministry of Labour and Environmental Abatement Council of Canada (EACC) Lead Guidelines.

Please refer to Appendix F – Hazardous Materials Checklist for material conditions, quantities (where applicable), and recommended actions.

Precautions should be taken as required during major renovations and demolition projects to ensure that workers' exposure levels to airborne lead do not exceed 0.05 mg/m3. This can be achieved by:

- providing workers with proper training;
- providing the workers with respiratory protection;
- wetting the surface of the materials to prevent dust emissions; and,
- providing workers with hygiene facilities to properly wash prior to exiting the work area.

Sub-trades working with or in close proximity to lead-based paint should be informed of its presence.

All waste material must be handled and disposed of according to the Revised Regulation of Ontario 347/90 as amended – made under the Environmental Protection Act. Lead waste generated may also be subject to the Leachate Criteria (Schedule 4) of this regulation.

3.3 Mercury

Findings

3.3.1 Thermostat Switches

No thermostats containing liquid mercury were observed throughout the subject building.

3.3.2 Fluorescent Light Tubes

Fluorescent light fixtures containing 2 to 4 tubes per fixture were identified throughout the subject building. Mercury is likely to be present in vapour form in fluorescent light tubes.

3.3.3 Pressure Gauges and Float Switches

No pressure gauges or float switches containing liquid mercury were identified throughout the subject building.

Recommendations

Please refer to Appendix F – Hazardous Materials Checklist for equipment conditions, quantities (where applicable), and recommended actions.

3.4 Silica

Findings

Silica is expected to be present in building materials such as concrete, brick, mortar and ceramic tiles throughout the structures. Free crystalline silica (α-Quartz) may be a component in ceiling tiles and gypsum board. Silica (including free crystalline silica) may also be a component of concrete and brick surfaces noted in the building.

Recommendations

Please refer to Appendix F – Hazardous Materials Checklist for equipment conditions, quantities (where applicable), and recommended actions.

Precautions should be taken as required during major renovations and demolition projects on concrete (i.e. coring through concrete slabs, masonry demolition, etc.) to ensure that workers' exposure levels to airborne silica do not exceed 0.05 mg/m^3.

This can be achieved by:

- providing workers with proper training;
- providing the workers with respiratory protection;
- wetting the surface of the materials to prevent dust emissions; and,
- providing workers with facilities to properly wash prior to exiting the work area.

Any demolition works likely to impact silica-containing materials should be carried out under the requirement detailed in the Ontario Ministry of Labour document entitled "Guideline: Silica on Construction Projects," dated," April 2011.

Other Hazardous Materials

3.5 Polychlorinated Biphenyls (PCBs)

Findings

3.5.1 Light Ballasts

LED and fluorescent lights illuminate the subject building. MPL assessed representative ballasts in the building and identified them as non-PCB-containing. These ballasts were observed to be manufactured by Sylvania.

3.5.2 Transformers

No PCBs containing electrical transformers were observed throughout the subject building. Transformers that could be assessed were observed to be dry-type and manufactured by Siemens.

Recommendations

Since no PCB-containing equipment was observed or suspected to be present during the site survey, no further action is required.

3.6 Ozone Depleting Substances (ODSs) and Other Halocarbon

Findings

A visual assessment was conducted for equipment potentially containing ODSs and other halocarbons. Equipment containing ODSs or other halocarbons was observed throughout the subject building.

Recommendations

Please refer to Appendix F – Hazardous Materials Checklist for equipment conditions, approximate quantities (where applicable), and recommended actions.

Under the management of a licensed contractor, equipment containing R22, R134a, and R404 does not represent a significant threat to human health or the environment; however, a licensed contractor must decommission equipment such that CFCs are contained and not released to the environment during servicing or operation.

3.7 Radioactive Materials

Findings

A visual assessment of the subject building was conducted to determine if any electrical components containing radioactive materials were present. MPL did not observe any equipment suspected of containing radioactive material throughout the subject building.

Recommendations

Since no equipment containing radioactive materials was observed or suspected to be present during the site survey, no further action is required.

3.8 Underground and Above Ground Storage Tanks (USTs and ASTs)

Findings

A visual survey of the subject building was conducted to determine if any USTs and ASTs were present. MPL did not observe underground or above-ground storage tanks throughout the building.

Recommendations

Since no underground or above-ground storage tanks were observed or suspected to be present during the site survey, no further action is required.

3.9 Mould

Findings

3.9.1 Mould

A visual survey of the subject building was conducted to determine if any mould was present. No mould growth was identified in any areas throughout the subject site.

3.9.2 Water Damage

A visual survey of the subject building was conducted to determine if water damage was present. No areas of water damage were observed.

Recommendations

Please refer to Appendix F – Hazardous Materials Checklist for equipment conditions, approximate quantities (where applicable), and recommended actions.

No further action is required since no mould or water-damaged areas were observed during the site survey.

This report should be made available to contractors tendering on any renovation or demolition work. In turn, all contractors requesting tenders from subcontractors shall furnish this report to subcontractors.

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 that were 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

Jane Zhang, M.Sc.
Hazardous Materials, EH&S Technician
Hazardous Materials/ Environmental Health & Safety

John Tufts, B.Sc.
Project Manager
Hazardous Materials/ Environmental Health & Safety

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 in April 2011 by the Occupational Health and Safety branch of the Ministry of Labour

Guideline: Silica on Construction Projects issued in 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 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 every 12 months 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 other hazardous materials such as polychlorinated biphenyls (PCBs), radioactive materials, ozone-depleting substances (ODSs), other halocarbons, and mould.

We understand that this survey has been conducted to comply with the regulatory requirements of Ontario Regulation 278/05.

APPENDIX B

Survey Methodology & Background Information

SURVEY METHODOLOGY

Not all Designated Substances or suspect hazardous materials were previously sampled for this survey. Selective sampling was conducted only for substances suspected to be present or those deemed to have a likely source of origin in the survey areas.

Materials that were homogeneous 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 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 previously collected and sent to A CALA-accredited independent laboratory for analysis. The Laboratory Certificates of Analysis are attached in Appendix C.

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 30 Marie Curie Private (Bioscience Ph II) 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 at the interior structure and finishes of the building. It did not consider current or past owner or occupant articles throughout the building (i.e. contents, furniture, etc.). It did 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 previously 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,

- Hazardous Materials Survey: 30 Marie Curie (Bioscience-Ph II), Ottawa, ON, prepared by McIntosh Perry Limited (dated October 13, 2020, reference # 0Z2021101HZ);

- Hazardous Materials Survey and 2022 Reassessment: 30 Marie Curie (Bioscience-Ph II), Ottawa, ON, prepared by McIntosh Perry Limited (dated November 28, 2022, reference # 0Z2021101HZ / CCC-230252-00);

Asbestos

Background Information on Asbestos

Asbestos is a generic name for a group of naturally occurring fibrous minerals. Asbestos was commonly used in building materials such as insulation, fireproofing and acoustic or decorative panels. Although there are many types of asbestos, Ontario's three primary forms of commercial importance are chrysotile, amosite and crocidolite.

An Asbestos-Containing Material (ACM) is defined by O. Reg. 278/05 as a material that contains 0.5% or more asbestos by dry weight. ACMs are placed into two general classes, "friable" and "non-friable" ACMs. Friable ACMs are those materials that, when dry, can be crumbled, pulverized and reduced to powder by hand pressure. Typical friable ACMs include acoustical or decorative texture coats, fireproofing and thermal insulation. Non-friable ACMs are much more durable as they are held together by a binder such as cement, vinyl or asphalt. Typical non-friable ACMs include floor tiles, fire blankets, roofing materials and cementitious products such as wallboards, pipes or siding.

It has been recognized that hazardous situations may exist in buildings where asbestos-containing materials are found. This is especially true where asbestos fibres may become airborne due to material aging, physical damage, water damage or air movement.

In contrast, there is little reason for concern if the asbestos is in good condition, has not been damaged and is not in a location where it is likely to be disturbed.

Asbestos Survey Methodology

The asbestos survey included identifying potential friable and non-friable asbestos-containing materials throughout the surveyed areas of the subject building.

The likelihood of ACMs being present in inaccessible areas, such as above gypsum wallboard ceilings and walls, was determined by assessing asbestos-containing materials in adjacent areas.

Fiberglass insulation was not submitted for analysis as it can be identified visually as non-asbestos material.

Building materials suspected of containing asbestos were identified, and representative sampling and laboratory testing of these materials was conducted. The number of bulk material samples collected from a homogeneous area was under Table 1. O. Reg. 278/05 s. 3 (3) below. Building materials suspected of containing asbestos were previously collected using wetting techniques and hand-sampling tools.

Table 1 - O. Reg. 278/05 s. 3(3): Minimum Asbestos Bulk Material Sample Requirements

Item	Type of material	Size of area of homogeneous material	Minimum number of bulk material samples to be collected
1.	Surfacing material, including, without limitation, material that is applied to surfaces by spraying, troweling or, such	Less than 90 square metres	3
		90 or more square metres but less than 450 square metres	5

	as acoustical plaster on ceilings and fireproofing materials on structural members	450 or more square metres	7
2.	Thermal insulation, except as described in item 3	any size	3
3.	Thermal insulation patch	Less than 2 linear metres or 0.5 square metres	1
4.	Other material	Any size	3

Preliminary identification of the samples was made using polarized light microscopy (PLM), confirming the presence and type of asbestos made by dispersion staining optical microscopy. This analytical procedure follows the U.S. Environmental Protection Agency Test Method EPA/600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials, June 1993.

EMSL Canada Inc. (EMSL), an independent laboratory, analyzed all bulk samples for asbestos content. EMSL is an independent laboratory accredited by the National Institute of Standards and Technology/National Voluntary Laboratory Accreditation (NIST/NVLAP) (Lab Code #200877-0).

Vinyl floor tiles were analyzed using the phase light microscopy (PLM) analysis method. However, given the composition of vinyl floor products, the PLM analysis method may be prone to yield false negative analytical results. Therefore, prior to removal or replacement, vinyl floor products previously identified as negative should undergo additional analysis by Transmission Electron Microscopy (TEM) to confirm asbestos content, if any.

Materials identified to contain asbestos were assessed on the relative possibility of fibre release into the air due to their condition and accessibility.

Evaluation of ACMs Based on Condition

In evaluating an ACM's condition, the following criteria were applied:

- **Good** – Material shows no signs of damage and/or is encapsulated. Asbestos-containing material could remain in place until eventual building demolition or major renovation.
- **Fair** – Material shows signs of minor damage (<5% damage) or near the end of useful life. This includes minor shrinking, cracking, delamination and/ or other damage. The material should be monitored closely and scheduled to be repaired, encapsulated or removed.
- **Poor** – Damage is greater than 5% to any ACM material and is highly recommended to be removed, repaired or encapsulated.

Note: The above evaluation criteria were also applied to other hazardous materials. For further details, please refer to the Asbestos and Hazardous Materials Checklist in Appendix E & F.

Lead

Background Information on Lead

Lead was a common additive in exterior and hard-wearing paint applications. Lead was used to prolong the paint's shelf life and increase its flexibility and durability to wear and weather. Acute exposure to lead by inhalation or ingestion may cause headaches, fatigue, nausea, abdominal cramps and joint pain. Chronic

exposures can cause reduced hemoglobin production and reduced lifespan. It has also been known to impact the body's central and peripheral nervous systems and brain function and has been linked to learning disabilities in children.

No regulatory limit in Ontario determines what lead concentration constitutes a "lead-containing material." On October 21, 2010, Health Canada, under the *Hazardous Products Act*, stated that the lead content in surface-coating materials, furniture, toys and other articles for children should not exceed 90 mg/kg (0.009%, 90 ppm). However, this is intended for importing or selling of products within Canada. Therefore, this is not to be misconstrued as a limit established to define a lead-containing material or a limitation with respect to lead on construction projects.

The Environmental Abatement Council of Canada (EACC) has also developed the "*Lead Guideline for Construction, Renovation, Maintenance or Repair*" dated October 2014, which discusses the classification, handling, disturbance and removal of lead-containing materials. For this guideline, paints or surface coatings containing less than or equal to 0.1% lead by weight (1000 mg/kg or 1000 ppm) are considered low-level lead paints or surface coatings. If these materials (and their respective surfaces) are disturbed non-aggressively and performed using adequate dust control procedures. In that case, worker protection from the inhalation of lead is not required.

Furthermore, paints or surface coatings containing greater than 0.1% lead by weight are considered lead-containing paints or surface coatings. If these materials (and their respective surfaces) are disturbed, appropriate lead abatement procedures must always be followed.

Exposure to lead-containing materials is regulated under Ontario Regulation 490/09, *Designated Substances* - made under the Occupational Health and Safety Act. Care must be taken to prevent lead-containing particles from becoming airborne during the disturbance of lead-containing surfaces (i.e., during renovation or demolition projects). All lead abatement work must follow procedures outlined in the Guideline Lead on Construction Projects, issued in September 2004 (amended in April 2011) by the Occupational Health and Safety branch of the Ministry of Labour (Type 1-3). Similarly, the lead abatement work procedures outlined in the EACC Lead Guideline for Construction, Renovation, Maintenance or Repair (October 2014) may also be implemented (Class 1-3).

Lead has been used in solder on copper plumbing fixtures, lead conduit pipes, lead-calcium battery plates, ammunition, and nuclear and X-ray shielding devices. However, these materials were not sampled during this investigation but were noted.

Representative bulk samples of paint and finishes suspected of containing lead were previously collected to verify lead content in paints. Bulk samples were scraped down to the building base structure, with all possible layers present, placed in sealed and labelled plastic bags and then submitted to an independent laboratory for analysis. Samples were treated with a dilute nitric acid sample digestion prior to filtration. The analysis utilized for lead detection in filtered samples was inductively coupled plasma optical emission spectrometry (ICP-OES).

Mercury

Background Information on Mercury

Mercury is known to cause human poisoning by inhaling vapours, ingesting contaminated materials, or absorbing it through skin absorption through direct contact with the liquid.

Precautions must be taken to prevent mercury vapours from becoming airborne during renovations or building demolition. Exposure to airborne mercury is regulated under the Revised O. Reg. 490/09 as amended – Regulation respecting Mercury – made under the Occupational Health and Safety Act; and under O. Reg. 558, which amended O. Reg. 347/90 (General - Waste Management), mercury is classified as a Schedule 2(b) Hazardous Waste Chemical. Its hazardous waste number is U151.

Mercury is found in thermostats, temperature and pressure gauges, fluorescent lamps and batteries. Mercury in products can be released to the environment through breakage or disposal at the end of a useful life. Improper disposal of these mercury products poses a health and environmental risk to everyone. In addition, the disposal of mercury-containing products can create wastes that are often classified as hazardous. Wastes that leach mercury in concentrations exceeding Ontario Regulation 347/90 (General - Waste Management) limits are also considered hazardous.

The mercury in the thermostat switch contains approximately 3-4 grams in a glass ampoule, typically attached to a metal coil. Mercury-containing switches have been used in thermostats for over 40 years.

Mercury is an essential component in fluorescent lamps and HID lamps. The mercury and the phosphor coating on the lamp tube are in a vapour form. Estimates of the mercury content contained in compact, 4-foot, and 8-foot lamps are 10 mg, 23 mg, and 46 mg, respectively.

Most fluorescent lamps qualify as hazardous waste when removed from service and are prohibited from disposal in the solid waste stream. Fluorescent lamps would be classified as 146T on your facility Generator Registration Report under O. Reg. 347/90 - General Waste Management, as amended by O. Reg. 558/00. Under this regulation, if the leachate results exceed 0.1 milligrams of mercury per litre for a given waste, the facility must treat the waste as hazardous. Most fluorescent and HID lamps will exceed the leachate toxicity limit; therefore, these wastes must be registered and treated as hazardous waste or sent for recycling.

Silica

Background Information on Silica

Silica is expected to be present in building materials such as concrete, brick, mortar and ceramic tiles throughout the structures. Free crystalline silica (□-Quartz) may be a component in ceiling tiles and gypsum boards. Silica (including free crystalline silica) may also be a component of concrete and brick surfaces noted in the building.

Exposure to airborne silica is regulated under Ontario Regulation 490/09, *Designated Substances* - made under the Occupational Health and Safety Act.

Other Designated Substances

Select Designated Substances (acrylonitrile, arsenic, coke oven emissions, ethylene oxide, isocyanates, benzene, or vinyl chloride) are not expected to be present in the building in matrix or sufficient quantities to cause an exceedance of Ministry of Labour exposure guidelines. As such, no sampling was conducted for these materials.

Vinyl Chloride

Vinyl chloride (monomer) is likely to be stable within poly vinyl-chloride (PVC) piping and conduits and as a component of interior finishes. Such building materials are not considered to be hazardous in their current matrix/composition.

Acrylonitrile

Acrylonitrile or ACN (vinyl cyanide) is an explosive, flammable liquid used to manufacture acrylic fibres, rubber-like materials and pesticide fumigants. Acrylonitrile was not noted and would not be expected to be present in the project-specific area/surveyed area/subject building.

Arsenic

Arsenic is used in metallurgy for hardening copper, lead and alloys, pigment production, manufacturing of certain types of glass, insecticides, fungicides and rodenticides, as a by-product in the smelting of copper ores, and as a dopant material in semiconductor manufacturing. Arsenic or arsenic compounds were not noted nor expected to be present in the project-specific area/surveyed area/subject building.

Benzene

Benzene or benzol is a colourless liquid. It is used as an intermediate in producing styrene, phenol, cyclohexane, and other organic chemicals and to manufacture detergents, pesticides, solvents, and paint removers. It is also found in gasoline. Benzene may be present in stable form in roofing materials, paints and adhesives located throughout the subject building. Such building materials are not considered to be hazardous in their current matrix/composition.

Coke Oven Emissions

Coke oven emission is a benzene-soluble fraction of the total particulate matter of the substances emitted into the atmosphere from metallurgical coke ovens.

Ethylene Oxides

Ethylene oxide is a colourless gas liquefying below 12°C. It is used generally as a fumigant and sterilizing agent for medical equipment. It is used generally as a fumigant and sterilizing agent for medical equipment.

Isocyanates

Isocyanate compounds may be present in stable form in paint finishes, varnishes, polyurethane plastics, synthetic rubbers, foams and adhesives. Such building materials are not considered to be hazardous in their current matrix/composition.

To reduce the potential for exposure to workers or occupants, any suspect hazardous building material(s) not detailed within this survey due to inaccessibility and/or discovered during any renovation or demolition activities must be properly assessed and/or tested prior to their disturbance.

APPENDIX C

Laboratory Analytical Reports

EMSL Canada Inc.

22 Antares Drive Suite 102 Ottawa, ON K2E 7Z6
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http://www.EMSL.com / ottawalab@EMSL.com

EMSL Canada Order 672000869
Customer ID: 55CTCS25B
Customer PO: 0Z2-021101
Project ID: Ottawa DSS

Attn: Stefan Holik
McIntosh Perry Consulting Engineers Ltd
115 Walgreen Rd RR 3
Carp, ON K0A 1L0

Phone: (613) 836-2184
Fax:
Collected: 6/ 2/2020
Received: 6/05/2020
Analyzed: 6/12/2020

Proj: University of Ottawa 0Z2-021101 (30 Marie Curie - Phase II) (Ottawa DSS)

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

Client Sample ID: 1.1 ***Lab Sample ID:*** **672000869-0001**
Sample Description: 30 Marie Curie - Phase II/VFT - light and dark grey mix

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 1.2 ***Lab Sample ID:*** **672000869-0002**
Sample Description: 30 Marie Curie - Phase II/VFT - light and dark grey mix

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 1.3-Vinyl Floor Tile ***Lab Sample ID:*** **672000869-0003**
Sample Description: 30 Marie Curie - Phase II/VFT - light and dark grey mix

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 1.3-Mastic ***Lab Sample ID:*** **672000869-0003A**
Sample Description: 30 Marie Curie - Phase II/VFT - light and dark grey mix

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Black	0.0%	100.0%	None Detected	

Client Sample ID: 2.1 ***Lab Sample ID:*** **672000869-0004**
Sample Description: 30 Marie Curie - Phase II/Cementitious coating - Room 505

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 2.2 ***Lab Sample ID:*** **672000869-0005**
Sample Description: 30 Marie Curie - Phase II/Cementitious coating - Room 505

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 2.3 ***Lab Sample ID:*** **672000869-0006**
Sample Description: 30 Marie Curie - Phase II/Cementitious coating - Room 505

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/12/2020	Gray	0.0%	100.0%	None Detected	

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EMSL Canada Order 672000869
Customer ID: 55CTCS25B
Customer PO: 0Z2-021101
Project ID: Ottawa DSS

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

Client Sample ID: 3.1 ***Lab Sample ID:*** **672000869-0007**

Sample Description: 30 Marie Curie - Phase II/VFT - dark grey with white and grey marks (131, 131, 140)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 3.2-Vinyl Floor Tile ***Lab Sample ID:*** **672000869-0008**

Sample Description: 30 Marie Curie - Phase II/VFT - dark grey with white and grey marks (131, 131, 140)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 3.2-Mastic ***Lab Sample ID:*** **672000869-0008A**

Sample Description: 30 Marie Curie - Phase II/VFT - dark grey with white and grey marks (131, 131, 140)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/11/2020				Insufficient Material	

Client Sample ID: 3.3-Vinyl Floor Tile ***Lab Sample ID:*** **672000869-0009**

Sample Description: 30 Marie Curie - Phase II/VFT - dark grey with white and grey marks (131, 131, 140)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/12/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 3.3-Mastic ***Lab Sample ID:*** **672000869-0009A**

Sample Description: 30 Marie Curie - Phase II/VFT - dark grey with white and grey marks (131, 131, 140)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/12/2020	Black	0.0%	100.0%	None Detected	

Client Sample ID: 4.1-Vinyl Floor Tile ***Lab Sample ID:*** **672000869-0010**

Sample Description: 30 Marie Curie - Phase II/VFT - black with white specks - Room 108

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 4.1-Mastic ***Lab Sample ID:*** **672000869-0010A**

Sample Description: 30 Marie Curie - Phase II/VFT - black with white specks - Room 108

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Black	0.0%	100.0%	None Detected	

Client Sample ID: 4.2-Vinyl Floor Tile ***Lab Sample ID:*** **672000869-0011**

Sample Description: 30 Marie Curie - Phase II/VFT - black with white specks - Room 108

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Gray	0.0%	100.0%	None Detected	

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EMSL Canada Order 672000869
Customer ID: 55CTCS25B
Customer PO: 0Z2-021101
Project ID: Ottawa DSS

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

Client Sample ID: 4.2-Mastic **Lab Sample ID:** **672000869-0011A**
Sample Description: 30 Marie Curie - Phase II/VFT - black with white specks - Room 108

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Black	0.0%	100.0%	None Detected	

Client Sample ID: 4.3-Vinyl Floor Tile **Lab Sample ID:** **672000869-0012**
Sample Description: 30 Marie Curie - Phase II/VFT - black with white specks - Room 108

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/12/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 4.3-Mastic **Lab Sample ID:** **672000869-0012A**
Sample Description: 30 Marie Curie - Phase II/VFT - black with white specks - Room 108

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/12/2020	Black	0.0%	100.0%	None Detected	

Client Sample ID: 5.1-Vinyl Floor Tile **Lab Sample ID:** **672000869-0013**
Sample Description: 30 Marie Curie - Phase II/VFT - light grey with white and grey marks - Room 106

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 5.1-Mastic **Lab Sample ID:** **672000869-0013A**
Sample Description: 30 Marie Curie - Phase II/VFT - light grey with white and grey marks - Room 106

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Black	0.0%	100.0%	None Detected	

Client Sample ID: 5.2-Vinyl Floor Tile **Lab Sample ID:** **672000869-0014**
Sample Description: 30 Marie Curie - Phase II/VFT - light grey with white and grey marks - Room 106

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 5.2-Mastic **Lab Sample ID:** **672000869-0014A**
Sample Description: 30 Marie Curie - Phase II/VFT - light grey with white and grey marks - Room 106

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Black	0.0%	100.0%	None Detected	

Client Sample ID: 5.3-Vinyl Floor Tile **Lab Sample ID:** **672000869-0015**
Sample Description: 30 Marie Curie - Phase II/VFT - light grey with white and grey marks - Room 106

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/12/2020	Gray	0.0%	100.0%	None Detected	

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Customer PO: 0Z2-021101
Project ID: Ottawa DSS

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

Client Sample ID: 5.3-Mastic **Lab Sample ID:** **672000869-0015A**
Sample Description: 30 Marie Curie - Phase II/VFT - light grey with white and grey marks - Room 106

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/12/2020	Black	0.0%	100.0%	None Detected	

Client Sample ID: 6.1-Firestop **Lab Sample ID:** **672000869-0016**
Sample Description: 30 Marie Curie - Phase II/VFT - red firestop - Room 133, 021

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Red	5.0%	95.0%	None Detected	

Client Sample ID: 6.1-Plaster **Lab Sample ID:** **672000869-0016A**
Sample Description: 30 Marie Curie - Phase II/VFT - red firestop - Room 133, 021

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 6.2 **Lab Sample ID:** **672000869-0017**
Sample Description: 30 Marie Curie - Phase II/VFT - red firestop - Room 133, 021

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Red	5.0%	95.0%	None Detected	

Client Sample ID: 6.3 **Lab Sample ID:** **672000869-0018**
Sample Description: 30 Marie Curie - Phase II/VFT - red firestop - Room 133, 021

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Red	5.0%	95.0%	None Detected	

Client Sample ID: 6.4 **Lab Sample ID:** **672000869-0019**
Sample Description: 30 Marie Curie - Phase II/VFT - red firestop - Room 133, 021

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/12/2020	Red	5.0%	95.0%	None Detected	

Client Sample ID: 7.1 **Lab Sample ID:** **672000869-0020**
Sample Description: 30 Marie Curie - Phase II/DJC

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	White	0.0%	100.0%	None Detected	

Client Sample ID: 7.2 **Lab Sample ID:** **672000869-0021**
Sample Description: 30 Marie Curie - Phase II/DJC

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	White	0.0%	100.0%	None Detected	

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

Client Sample ID: 7.3 ***Lab Sample ID:*** **672000869-0022**
Sample Description: 30 Marie Curie - Phase II/DJC

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	White	0.0%	100.0%	None Detected	

Client Sample ID: 7.4 ***Lab Sample ID:*** **672000869-0023**
Sample Description: 30 Marie Curie - Phase II/DJC

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	White	0.0%	100.0%	None Detected	

Client Sample ID: 7.5 ***Lab Sample ID:*** **672000869-0024**
Sample Description: 30 Marie Curie - Phase II/DJC

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	White	0.0%	100.0%	None Detected	

Client Sample ID: 7.6 ***Lab Sample ID:*** **672000869-0025**
Sample Description: 30 Marie Curie - Phase II/DJC

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/12/2020	White	0.0%	100.0%	None Detected	

Client Sample ID: 7.7 ***Lab Sample ID:*** **672000869-0026**
Sample Description: 30 Marie Curie - Phase II/DJC

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/12/2020	White	0.0%	100.0%	None Detected	

Client Sample ID: 8.1 ***Lab Sample ID:*** **672000869-0027**
Sample Description: 30 Marie Curie - Phase II/Wall texture coat - Room 001

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 8.2 ***Lab Sample ID:*** **672000869-0028**
Sample Description: 30 Marie Curie - Phase II/Wall texture coat - Room 001

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 8.3 ***Lab Sample ID:*** **672000869-0029**
Sample Description: 30 Marie Curie - Phase II/Wall texture coat - Room 001

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	6/12/2020	Gray	0.0%	100.0%	None Detected	

EMSL Canada Inc.

22 Antares Drive Suite 102 Ottawa, ON K2E 7Z6
Phone/Fax: (343) 882-6076 / (343) 882-6077
http://www.EMSL.com / ottawalab@EMSL.com

EMSL Canada Order 672000869
Customer ID: 55CTCS25B
Customer PO: 0Z2-021101
Project ID: Ottawa DSS

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

Client Sample ID: 9.1 ***Lab Sample ID:*** **672000869-0030**

Sample Description: 30 Marie Curie - Phase II/VFT - beige w/ white + brown (323)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Beige	0.0%	100.0%	None Detected	

Client Sample ID: 9.2-Vinyl Floor Tile ***Lab Sample ID:*** **672000869-0031**

Sample Description: 30 Marie Curie - Phase II/VFT - beige w/ white + brown (323)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Beige	0.0%	100.0%	None Detected	

Client Sample ID: 9.2-Mastic ***Lab Sample ID:*** **672000869-0031A**

Sample Description: 30 Marie Curie - Phase II/VFT - beige w/ white + brown (323)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/11/2020	Black	0.0%	100.0%	None Detected	

Client Sample ID: 9.3-Vinyl Floor Tile ***Lab Sample ID:*** **672000869-0032**

Sample Description: 30 Marie Curie - Phase II/VFT - beige w/ white + brown (323)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/12/2020	Beige	0.0%	100.0%	None Detected	

Client Sample ID: 9.3-Mastic ***Lab Sample ID:*** **672000869-0032A**

Sample Description: 30 Marie Curie - Phase II/VFT - beige w/ white + brown (323)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	6/12/2020				Insufficient Material	

Analyst(s):

Ewa Krupinska PLM (28)
Simon Parent PLM (14)

Reviewed and approved by:

Simon Parent, Laboratory Manager
or Other Approved Signatory

None Detected = <0.1%. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted. 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. Ottawa, ON

Report amended: 06/12/202010:36:12 Replaces initial report from: 06/12/202010:34:10 Reason Code: DataEntry-Other (see report comment)

EMSL Canada Inc.
2756 Slough Street, Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
http://www.EMSL.com torontolab@emsl.com

EMSL Canada Or	552006091
CustomerID:	55CTCS25B
CustomerPO:	0Z2-021101
ProjectID:	

Attn: **Stefan Holik**
McIntosh Perry Consulting Engineers Ltd
115 Walgreen Rd RR 3
Carp, ON K0A 1L0

Phone: (613) 836-2184
Fax:
Received: 06/08/20 11:19 AM
Collected:

Project: **University of Ottawa 0Z2-021101 Ottawa DSS**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client SampleDescription	Collected	Analyzed	Weight	RDL	Lead Concentration
PB1		6/9/2020	0.2434 g	0.0082 % wt	0.0089 % wt
552006091-0001	Site: 30 Marie Curie - Phase II - grey wall - 121				
PB2		6/9/2020	0.2493 g	0.0080 % wt	0.011 % wt
552006091-0002	Site: 30 Marie Curie - Phase II - grey floor - Room 021				
PB3		6/9/2020	0.0914 g	0.022 % wt	<0.022 % wt
552006091-0003	Site: 30 Marie Curie - Phase II - blue wall Insufficient sample to reach reporting limit.				
PB4		6/9/2020	0.2456 g	0.0081 % wt	0.030 % wt
552006091-0004	Site: 30 Marie Curie - Phase II - green - Room 018				
PB5		6/9/2020	0.2422 g	0.0083 % wt	0.016 % wt
552006091-0005	Site: 30 Marie Curie - Phase II - Pink floor - Room 021				
PB6		6/9/2020	0.2425 g	0.0082 % wt	<0.0082 % wt
552006091-0006	Site: 30 Marie Curie - Phase II - white				
PB7		6/9/2020	0.0815 g	0.025 % wt	<0.025 % wt
552006091-0007	Site: 30 Marie Curie - Phase II - brown Insufficient sample to reach reporting limit.				
PB8		6/9/2020	0.1849 g	0.011 % wt	<0.011 % wt
552006091-0008	Site: 30 Marie Curie - Phase II - blue - 221 Insufficient sample to reach reporting limit.				

Rowena Fanto, Lead Supervisor
or other approved signatory

*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. Unless noted, results in this report are not blank corrected. 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. When the information supplied by the customer can affect the validity of the results, it will be noted on the reoprt. "<" (less than) result signifies the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

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

Initial report from 06/15/2020 08:37:34

APPENDIX D

Site Photographs

Photo 1: A representative view of the building finishes is observed throughout the subject building.

Photo 2: A representative view of the building finishes is observed throughout the subject building.

Photo 3: Representative view of the non-asbestos-containing mechanical insulation observed throughout the subject building.

Photo 4: Representative view of the non-asbestos-containing mechanical insulation observed throughout the subject building.

Photo 5: View of the lead-containing battery packs and mercury-containing fluorescent light fixtures observed throughout Room 528.

Photo 6: View of the non-asbestos-containing firestop caulking (Red) observed throughout the subject building.

Photo 7: A representative view of the equipment containing ODSs was observed throughout the subject building.

Photo 8: Representative view of the non-PCB dry-type transformers observed throughout the subject building.

APPENDIX E

Asbestos-Containing Materials Checklists

Floor/Level	Room	Type of ACM	Asbestos Confirmed/ Suspected	Friable/Non-Friable	Damaged/ Deteriorated	Accessibility	Level of Work Near Material	Approx. Quantity	Unit	Recommended Action
0	Throughout Level	Fire Doors	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place
0	Throughout Level	Concrete Block Mortar	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place
0	Throughout Level	Ceramic Wall/ Floor Tile Grout	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place
1	Throughout Level	Fire Doors	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place
1	Throughout Level	Concrete Block Mortar	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place
1	Throughout Level	Ceramic Wall/ Floor Tile Grout	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place
2	Throughout Level	Fire Doors	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place
2	Throughout Level	Concrete Block Mortar	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place
2	Throughout Level	Ceramic Wall/ Floor Tile Grout	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place
3	Throughout Level	Fire Doors	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place
3	Throughout Level	Concrete Block Mortar	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place
3	Throughout Level	Ceramic Wall/ Floor Tile Grout	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place
4	Throughout Level	Fire Doors	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place

Floor/Level	Room	Type of ACM	Asbestos Confirmed/ Suspected	Friable/Non-Friable	Damaged/ Deteriorated	Accessibility	Level of Work Near Material	Approx. Quantity	Unit	Recommended Action
4	Throughout Level	Concrete Block Mortar	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place
4	Throughout Level	Ceramic Wall/ Floor Tile Grout	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place
5	Throughout Level	Fire Doors	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place
5	Throughout Level	Concrete Block Mortar	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place
5	Throughout Level	Ceramic Wall/ Floor Tile Grout	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place
6	Roof Level	Roofing Materials	Suspected	-	Good Condition	Easy	Low	-	-	Manage in Place

APPENDIX F

Hazardous Containing Materials Checklists

Floor/Level	Room	DS Type	Component	Colour	Condition	Manufacturer	Approx. Quantity	Unit	Suspected/ Confirmed	Recommended Action	Comments
0	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	Good Condition	-	-	-	Confirmed	Manage in Place	
0	Throughout Level	Silica	Concrete, Mortar, Etc.	N/A	Good Condition	-	-	-	Confirmed	Manage in Place	
0	Room 000D	Ozone Depleting Substances (ODS)	Water Fountain	N/A	Good Condition	Unknown	1	C	Confirmed	Manage in Place	R134a
0	Room 012	Ozone Depleting Substances (ODS)	Freezer	N/A	Good Condition	Frigidaire, Sanyo	3	C	Confirmed	Manage in Place	R134a
0	Room 009	Ozone Depleting Substances (ODS)	Freezer	N/A	Good Condition	Woods	1	C	Confirmed	Manage in Place	R12
0	Throughout Level	Lead	Floor Paint	Grey	Good Condition	N/A	-	-	Confirmed	Manage in Place	
0	Throughout Level	Lead	Wall Paint	Green	Good Condition	N/A	-	-	Confirmed	Manage in Place	
0	Throughout Level	Lead	Floor Paint	Pink	Good Condition	N/A	-	-	Confirmed	Manage in Place	
0	Room 001	Lead	Battery Pack	N/A	Good Condition	Ready-Lite	1	C	Confirmed	Manage in Place	
1	Throughout Level	Lead	Floor Paint	Grey	Good Condition	N/A	-	-	Confirmed	Manage in Place	
1	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	Good Condition	-	-	-	Confirmed	Manage in Place	
1	Throughout Level	Silica	Concrete, Mortar, Etc.	N/A	Good Condition	-	-	-	Confirmed	Manage in Place	
1	Throughout Level	Lead	Wall Paint	Grey	Good Condition	N/A	-	-	Confirmed	Manage in Place	
1	Room 100E	Ozone Depleting Substances (ODS)	Water Fountain	N/A	Good Condition	Unknown	1	C	Confirmed	Manage in Place	R134a

Floor/Level	Room	DS Type	Component	Colour	Condition	Manufacturer	Approx. Quantity	Unit	Suspected/ Confirmed	Recommended Action	Comments
1	Room 141A	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Whirpool	1	C	Confirmed	Manage in Place	R134a
1	Room 112	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Woods, Thermo Scientific, Inglis	3	C	Confirmed	Manage in Place	R134a
1	Room 130	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Woods	1	C	Confirmed	Manage in Place	R134a
1	Room 133	Lead	Battery Pack	N/A	Good Condition	Ready-Lite	1	C	Confirmed	Manage in Place	
2	Throughout Level	Lead	Floor Paint	Grey	Good Condition	N/A	-	-	Confirmed	Manage in Place	
2	Room 200E	Ozone Depleting Substances (ODS)	Water Fountain	N/A	Good Condition	Unknown	1	C	Confirmed	Manage in Place	R134a
2	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	Good Condition	-	-	-	Confirmed	Manage in Place	
2	Throughout Level	Silica	Concrete, Mortar, Etc.	N/A	Good Condition	-	-	-	Confirmed	Manage in Place	
2	Room 231	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Woods, Viking, VWR	3	C	Confirmed	Manage in Place	R134a
2	Room 232	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Woods, Frigidaire	2	C	Confirmed	Manage in Place	R134a
2	Room 230	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Woods	1	C	Confirmed	Manage in Place	R134a
2	Room 210	Ozone Depleting Substances (ODS)	Freezer	N/A	Good Condition	Cryocube, Thermo Scientific	3	C	Confirmed	Manage in Place	R404A

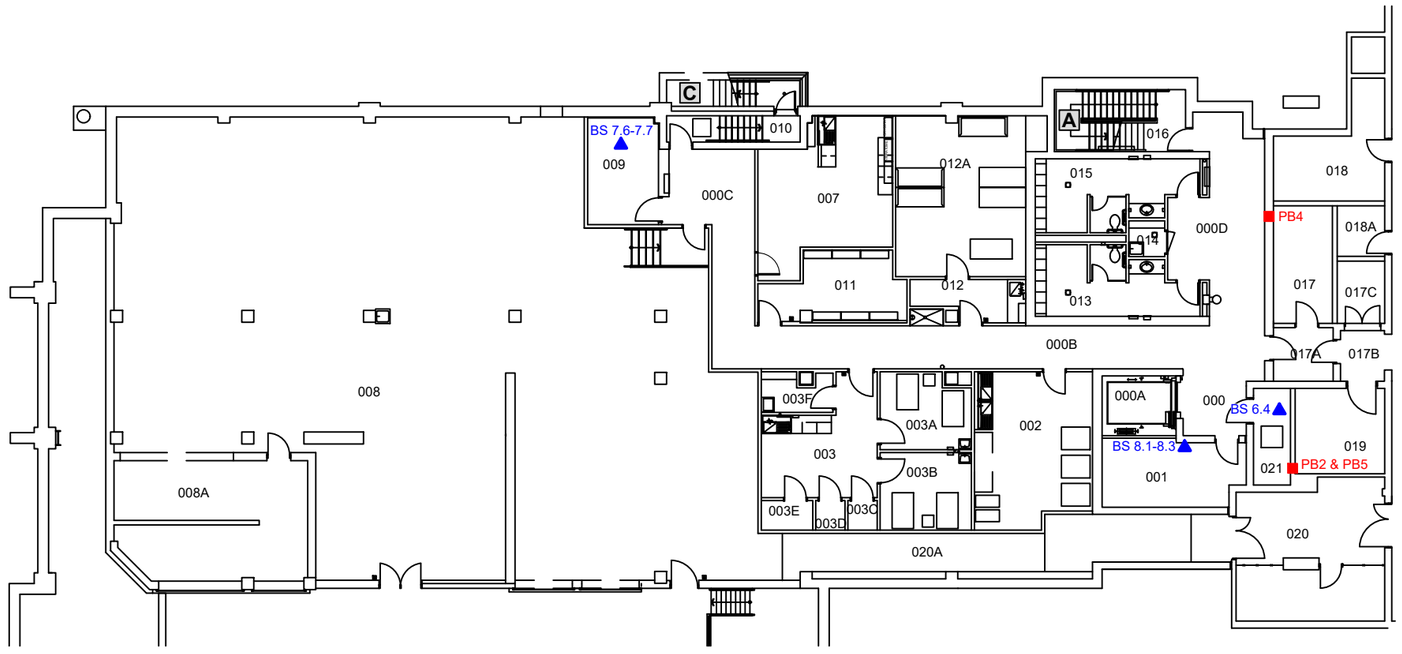
Floor/Level	Room	DS Type	Component	Colour	Condition	Manufacturer	Approx. Quantity	Unit	Suspected/ Confirmed	Recommended Action	Comments
2	Room 202A	Ozone Depleting Substances (ODS)	Freezer	N/A	Good Condition	Thermo Scientific, Woods, Amana	3	C	Confirmed	Manage in Place	R12 & R132a
2	Room 236	Ozone Depleting Substances (ODS)	Freezer	N/A	Good Condition	Thermo Scientific, Danby, Woods	4	C	Confirmed	Manage in Place	R134a
2	Room 234	Lead	Battery Pack	N/A	Good Condition	Ready-Lite	1	C	Confirmed	Manage in Place	
3	Throughout Level	Lead	Floor Paint	Grey	Good Condition	N/A	-	-	Confirmed	Manage in Place	
3	Room 300F	Ozone Depleting Substances (ODS)	Water Fountain	N/A	Good Condition	Unknown	1	C	Confirmed	Manage in Place	R134a
3	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	Good Condition	-	-	-	Confirmed	Manage in Place	
3	Throughout Level	Silica	Concrete, Mortar, Etc.	N/A	Good Condition	-	-	-	Confirmed	Manage in Place	
3	Room 331	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Inglis	1	C	Confirmed	Manage in Place	R134a
3	Room 331A	Ozone Depleting Substances (ODS)	Freezer	N/A	Good Condition	Thermo Scientific	3	C	Confirmed	Manage in Place	R134a

Floor/Level	Room	DS Type	Component	Colour	Condition	Manufacturer	Approx. Quantity	Unit	Suspected/ Confirmed	Recommended Action	Comments
3	Room 311	Ozone Depleting Substances (ODS)	Freezer	N/A	Good Condition	Thermo Scientific	3	C	Confirmed	Manage in Place	R134a
3	Room 300D	Ozone Depleting Substances (ODS)	Ice Making Machine	N/A	Good Condition	Hoshizaki	1	C	Confirmed	Manage in Place	R404A
4	Throughout Level	Lead	Floor Paint	Grey	Good Condition	N/A	-	-	Confirmed	Manage in Place	
4	Room 400F	Ozone Depleting Substances (ODS)	Water Fountain	N/A	Good Condition	Unknown	1	C	Confirmed	Manage in Place	R134a
4	Room 429	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	VWR	2	C	Confirmed	Manage in Place	R134a
4	Room 408	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Kenmore	1	C	Confirmed	Manage in Place	R12
4	Room 410	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Kelvinator	1	C	Confirmed	Manage in Place	Unknown Refrigerant
4	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	Good Condition	-	-	-	Confirmed	Manage in Place	
4	Throughout Level	Silica	Concrete, Mortar, Etc.	N/A	Good Condition	-	-	-	Confirmed	Manage in Place	
4	Room 433	Lead	Battery Pack	N/A	Good Condition	Ready-Lite	1	C	Confirmed	Manage in Place	
5	Throughout Level	Lead	Floor Paint	Grey	Good Condition	N/A	-	-	Confirmed	Manage in Place	
5	Room 500F	Ozone Depleting Substances (ODS)	Water Fountain	N/A	Good Condition	Unknown	1	C	Confirmed	Manage in Place	R134a
5	Room 512	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Silhouette, Danby	2	C	Confirmed	Manage in Place	R134a
5	Room 527	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Whirpool, Danby	2	C	Confirmed	Manage in Place	R134a
5	Room 510	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Danby	1	C	Confirmed	Manage in Place	R134a
5	Room 505	Lead	Battery Pack	N/A	Good Condition	Ready-Lite	1	C	Confirmed	Manage in Place	

Floor/Level	Room	DS Type	Component	Colour	Condition	Manufacturer	Approx. Quantity	Unit	Suspected/ Confirmed	Recommended Action	Comments
5	Room 530	Lead	Battery Pack	N/A	Good Condition	Ready-Lite	1	C	Confirmed	Manage in Place	
5	Room 529	Lead	Battery Pack	N/A	Good Condition	Ready-Lite	1	C	Confirmed	Manage in Place	
5	Room 528	Lead	Battery Pack	N/A	Good Condition	Ready-Lite	1	C	Confirmed	Manage in Place	
5	Room 575A	Ozone Depleting Substances (ODS)	Refrigerator	N/A	Good Condition	Danby	1	C	Confirmed	Manage in Place	R134a
5	Throughout Level	Mercury	Fluorescent Light Tubes	N/A	Good Condition	-	-	-	Confirmed	Manage in Place	
5	Throughout Level	Silica	Concrete, Mortar, Etc.	N/A	Good Condition	-	-	-	Confirmed	Manage in Place	
6	Throughout Level	Silica	Concrete, Mortar, Etc.	N/A	Good Condition	-	-	-	Confirmed	Manage in Place	

APPENDIX G

Site Sampling & Location Plans



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McINTOSH PERRY
6240 HIGHWAY 7 SUITE 200 WOODBRIDGE ON L4H 4G3
Tel: 905.856.5200 Fax: 905.695.0221
Toll Free: 1.888.348.8991 www.mcintoshperry.com

Legend:

- ▲ Asbestos Bulk Sample
- □ Lead Paint Sample <LOD
- ■ Lead Paint Sample >LOD

CLIENT: UNIVERSITY OF OTTAWA

PROJECT: 30 MARIE CURIE (BIO PH II)
HAZARDOUS MATERIALS SURVEYS

TITLE: SAMPLE LOCATIONS LEVEL 0

SCALE: 1:250

DATE: JULY 21, 2020

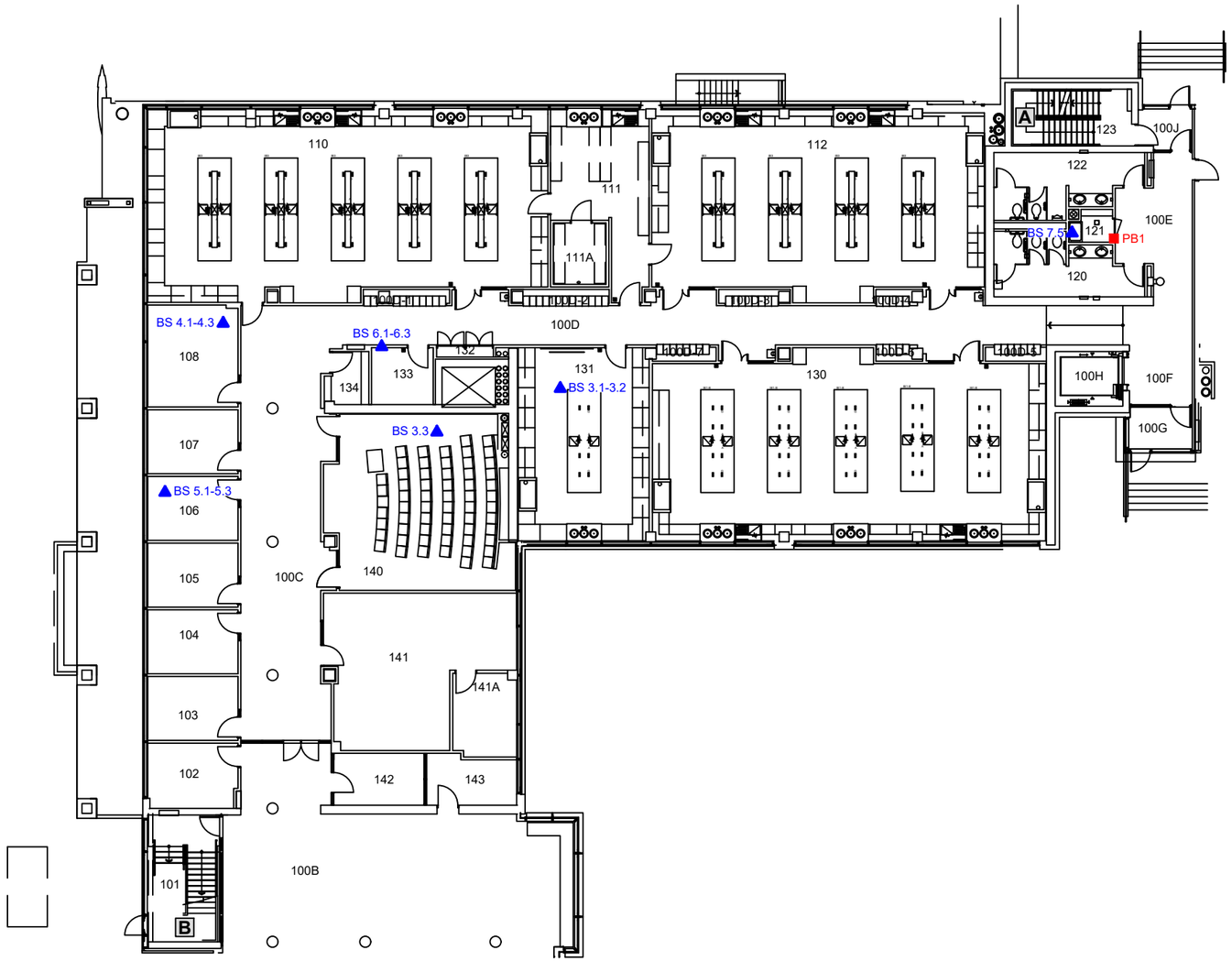
DRAWN: O.B.

CHECKED: C.W.

REV. NO.	DESCRIPTION	DATE	BY	APPD.

DRAWING NUMBER: A0

REV.:



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McINTOSH PERRY
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Tel: 905.856.5200 Fax: 905.695.0221
Toll Free: 1.888.348.8991 www.mcintoshperry.com

Legend:

- ▲ Asbestos Bulk Sample
- □ Lead Paint Sample <LOD
- ■ Lead Paint Sample >LOD

CLIENT: UNIVERSITY OF OTTAWA

PROJECT: 30 MARIE CURIE (BIO PH II)
HAZARDOUS MATERIALS SURVEYS

TITLE: SAMPLE LOCATIONS
LEVEL 1

SCALE: 1:250

DATE: JULY 21, 2020

DRAWN: O.B.

CHECKED: C.W.

REV. NO.	DESCRIPTION	DATE	BY	APPD.

DRAWING NUMBER: A1

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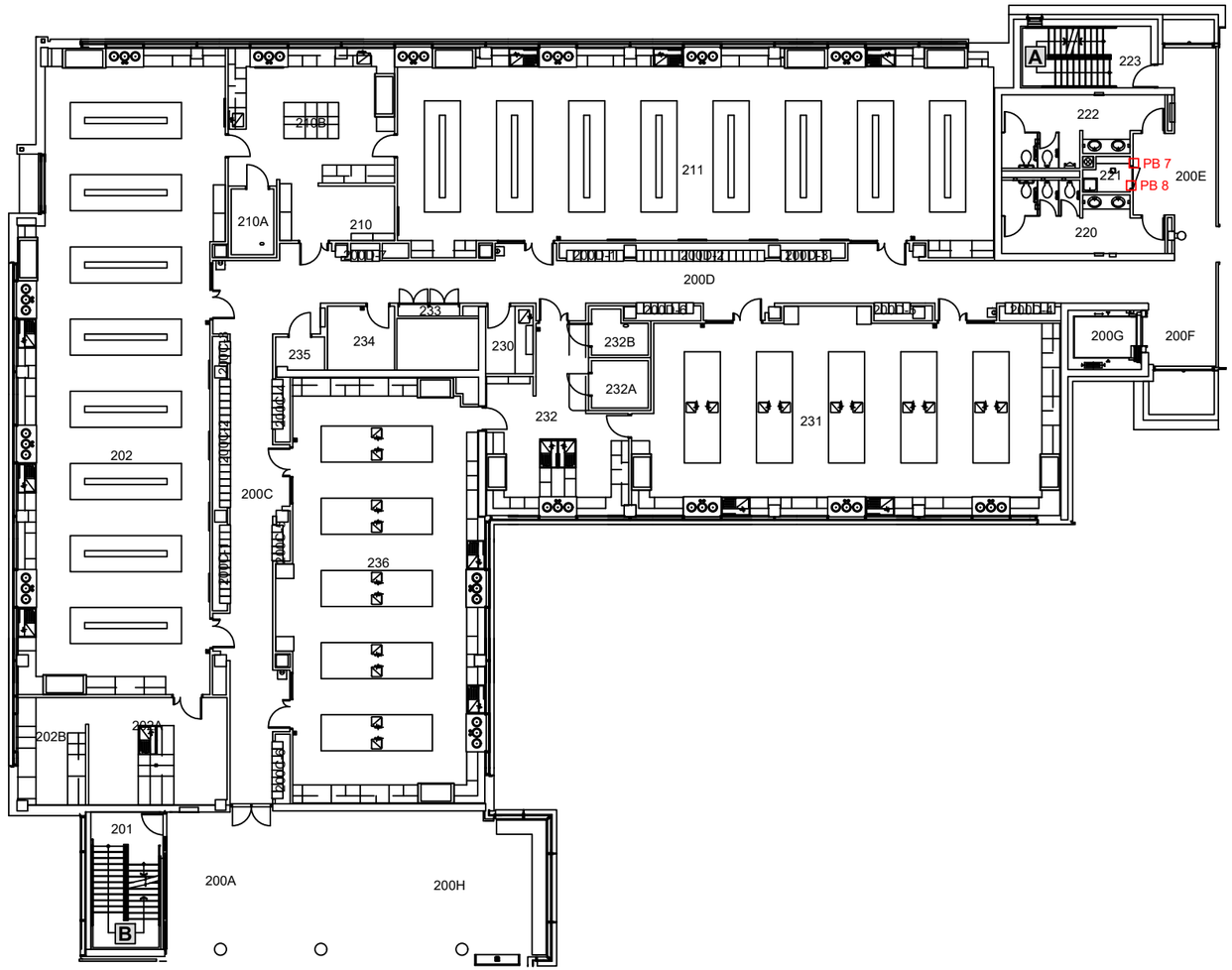

McINTOSH PERRY
6240 HIGHWAY 7 SUITE 200 WOODBRIDGE ON L4H 4G3
Tel: 905.856.5200 Fax: 905.695.0221
Toll Free: 1.888.348.8991 www.mcintoshperry.com

Legend:

- ▲ Asbestos Bulk Sample
- □ Lead Paint Sample <LOD
- ■ Lead Paint Sample >LOD

CLIENT: UNIVERSITY OF OTTAWA

PROJECT: 30 MARIE CURIE (BIO PH II)
HAZARDOUS MATERIALS SURVEYS

TITLE: SAMPLE LOCATIONS LEVEL 2

SCALE: 1:250

DATE: JULY 21, 2020

DRAWN: O.B.

CHECKED: C.W.

REV. NO.	DESCRIPTION	DATE	BY	APPD.

DRAWING NUMBER: A2

REV.:

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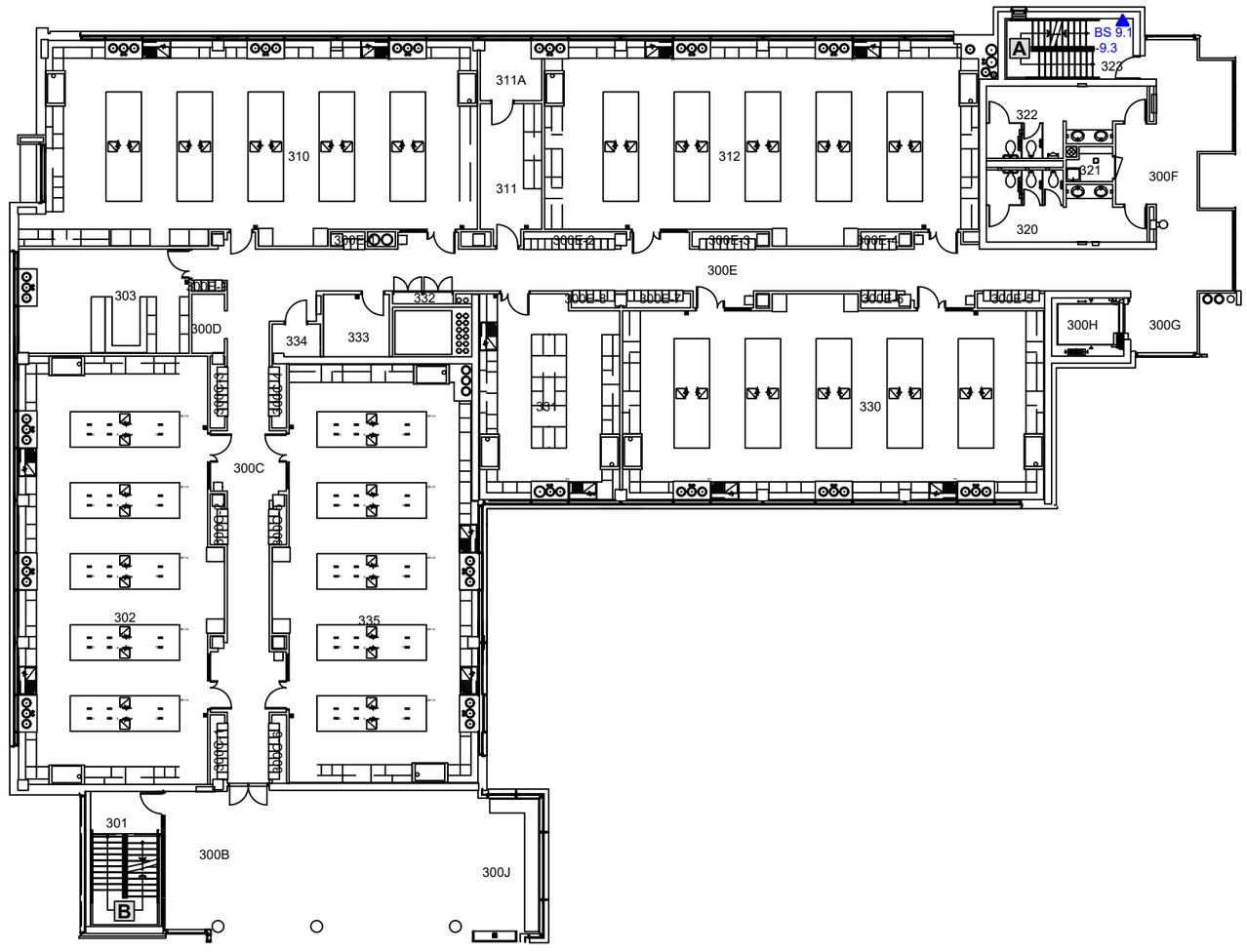

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McINTOSH PERRY
6240 HIGHWAY 7 SUITE 200 WOODBRIDGE ON L4H 4G3
Tel: 905.856.5200 Fax: 905.695.0221
Toll Free: 1.888.348.8991 www.mcintoshperry.com

Legend:

- ▲ Asbestos Bulk Sample
- □ Lead Paint Sample <LOD
- ■ Lead Paint Sample >LOD

CLIENT: UNIVERSITY OF OTTAWA

PROJECT: 30 MARIE CURIE (BIO PH II)
HAZARDOUS MATERIALS SURVEYS

TITLE: SAMPLE LOCATIONS
LEVEL 3

SCALE: 1:250

DATE: JULY 21, 2020

DRAWN: O.B.

CHECKED: C.W.

REV. NO.	DESCRIPTION	DATE	BY	APPD.

DRAWING NUMBER: A3

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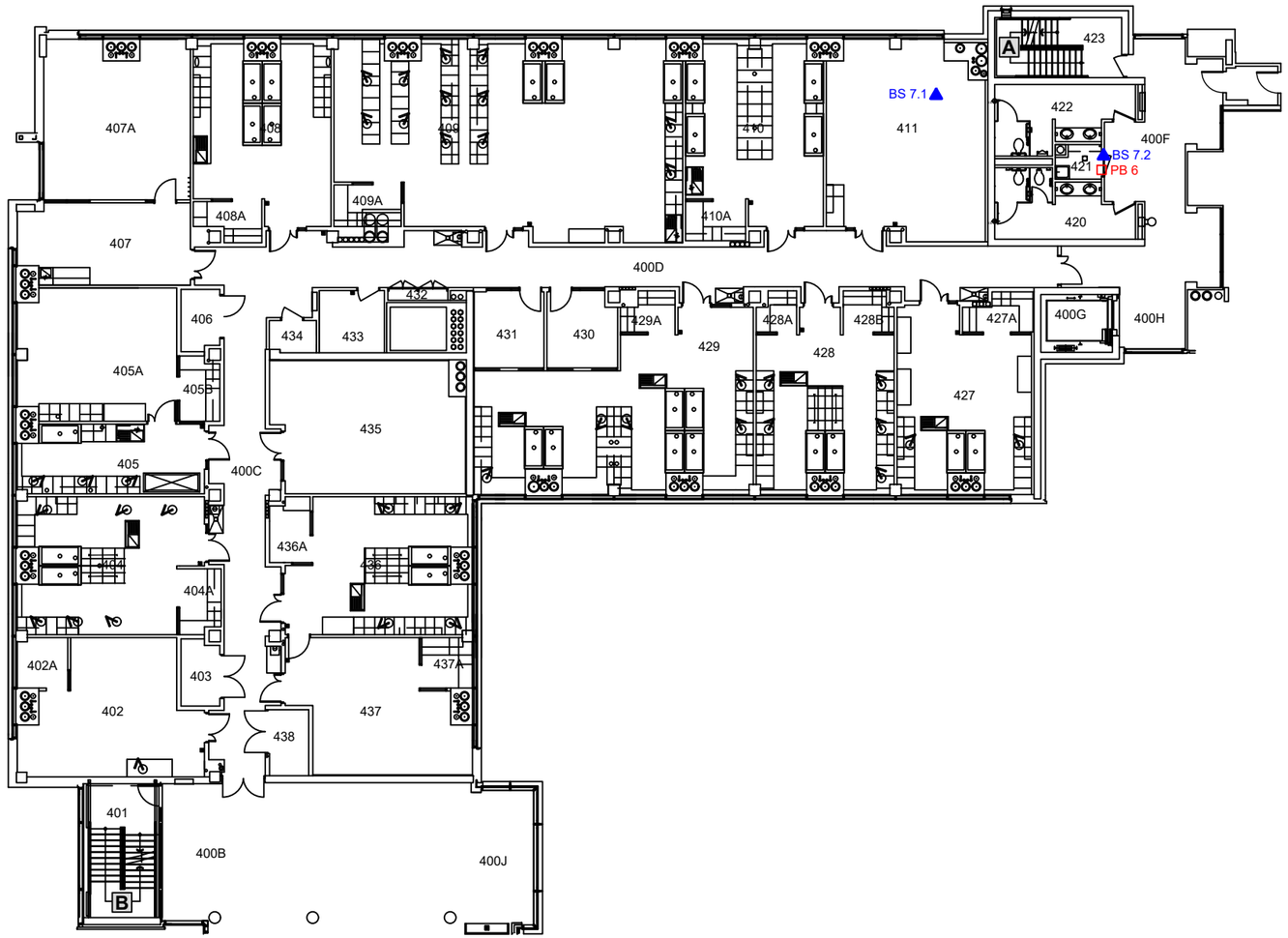


McINTOSH PERRY
6240 HIGHWAY 7 SUITE 200 WOODBRIDGE ON L4H 4G3
Tel: 905.856.5200 Fax: 905.695.0221
Toll Free: 1.888.348.8991 www.mcintoshperry.com

Legend:

- ▲ Asbestos Bulk Sample
- □ Lead Paint Sample <LOD
- ■ Lead Paint Sample >LOD

CLIENT: UNIVERSITY OF OTTAWA

PROJECT: 30 MARIE CURIE (BIO PH II)
HAZARDOUS MATERIALS SURVEYS

TITLE: SAMPLE LOCATIONS LEVEL 4

SCALE: 1:250

DATE: JULY 21, 2020

DRAWN: O.B.

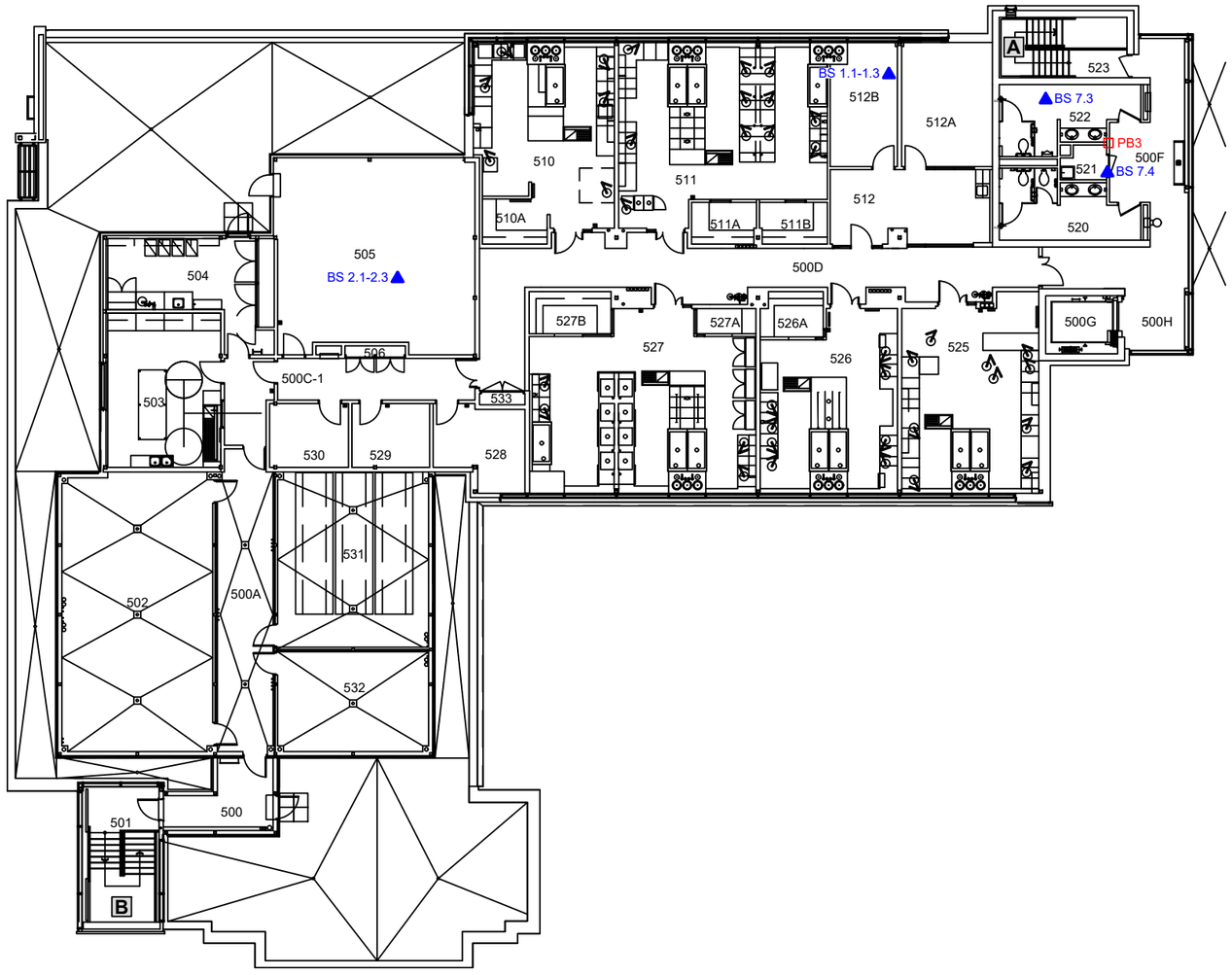
CHECKED: C.W.

REV. NO.	DESCRIPTION	DATE	BY	APPD.

DRAWING NUMBER: A4

REV.:

C:\USERS\DIANAB\ONEDRIVE - MCINTOSH PERRY\LMG DRAFTING\LMG COMPLETED\14_30 MARIE CURIE (BIO PH II)\30 MARIE CURIE (BIO PH II).DWG



Legend:

- ▲ Asbestos Bulk Sample
- □ Lead Paint Sample <LOD
- ■ Lead Paint Sample >LOD

McINTOSH PERRY
6240 HIGHWAY 7 SUITE 200 WOODBRIDGE ON L4H 4G3
Tel: 905.856.5200 Fax: 905.695.0221
Toll Free: 1.888.348.8991 www.mcintoshperry.com

CLIENT: UNIVERSITY OF OTTAWA

PROJECT: 30 MARIE CURIE (BIO PH II)
HAZARDOUS MATERIALS SURVEYS

TITLE: SAMPLE LOCATIONS LEVEL 5

SCALE: 1:250

DATE: JULY 21, 2020

DRAWN: O.B.

CHECKED: C.W.

REV. NO.	DESCRIPTION	DATE	BY	APPD.

DRAWING NUMBER: A5

REV.:

C:\USERS\DIANAB\ONEDRIVE - MCINTOSH PERRY\LMG DRAFTING\LMG COMPLETED\14. 30 MARIE CURIE (BIO PH II)\30 MARIE CURIE (BIO PH II).DWG