



**Designated Substances and
Hazardous Building Materials
Assessment – SAR Station**

Search and Rescue Station (SAR)
Cobourg, Ontario

February 21, 2020

Prepared for:

Public Works and Government Services
Canada
4900 Yonge Street
Toronto ON M2N 6A6

Prepared by:

Stantec Consulting Ltd.
150-1555 Wentworth Street
Whitby ON L1N 9T6

Project No.: 122150932

**DESIGNATED SUBSTANCES AND HAZARDOUS BUILDING MATERIALS ASSESSMENT
SEARCH AND RESCUE STATION (SAR), COBOURG, ONTARIO**

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Executive Summary

Stantec Consulting Ltd. (Stantec) was commissioned by Public Works and Government Services Canada (PWGSC) to conduct a designated substances and hazardous building materials assessment for the demolition of four buildings (subject buildings) located at the Search and Rescue (SAR) Station (the site) in Cobourg, Ontario. The purpose of the assessment was to identify potential designated substances and hazardous building materials that may require special attention prior to the planned demolition of the following four buildings:

- House (main residence building)
- Office Building (secondary office)
- Pier Building (workshop)
- Garden Shed (shed)

The work was carried out in accordance with the requirements of the PSPC Asbestos Management Standard, PSPC Management Directive, Canada Labour Code Part II (The Code), Canada Occupational Health and Safety Regulations (COHSR), The National Joint Council (NJC) Occupational Health and Safety Directive (OHS Directive) and provincial regulations including Ontario Regulation 278/05 Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations, as amended (O. Reg. 278/05), made under the Occupational Health and Safety Act (OHSA).

The designated substances assessment list includes those substances designated under the OHSA and included (but were not limited to) asbestos, lead, mercury and silica as the most likely to be present. In addition to designated substances, the hazardous building materials considered in this assessment included: polychlorinated biphenyls (PCBs); ozone-depleting substances (ODSs); urea-formaldehyde foam insulation (UFFI); mould; fuel oil and/or waste oil storage; chemical storage; and radioactive sources.

Based on the visual assessment and laboratory analysis, designated substances and hazardous building materials were identified to be present. Table 1 below provides a summary of the materials identified and recommendations on their management.



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Table 1: Summary of Findings

Building Materials	Comments
Asbestos	<p>Building materials suspected to be asbestos-containing have been identified to be asbestos-containing by laboratory analysis and were observed in the form of:</p> <p>House</p> <ul style="list-style-type: none"> • Vermiculite insulation • Vinyl floor tiles – beige • Exterior window glazing compound – black <p>Office Building</p> <ul style="list-style-type: none"> • Exterior window glazing compound – black <p>These materials were observed to be in good condition.</p> <p>Presumed asbestos-containing materials (PACMs) were not observed to be present.</p> <p>Refer to Appendix E for a summary of occurrences of asbestos-containing materials.</p>
Lead	<p>Samples of 22 paint applications were collected and submitted for lead content analysis.</p> <p>Six of the results indicated that the tested materials contain lead in concentrations that are greater than 90 ppm as follows:</p> <ul style="list-style-type: none"> • House – white coloured paint on exterior wood finishing (trim, etc.) • House – white coloured paint on interior wood finishing (trim, etc.) and plaster ceilings • House – brown coloured paint on interior door frames • Office Building – white coloured paint on interior wood siding • Pier Building – white coloured paint on exterior doors and door frames • Pier Building – white coloured paint on interior wood board walls and ceiling <p>Refer to Section 3.5.2 for details.</p> <p>The following paint applications that contain lead in concentrations greater than 90 ppm were observed to be in poor condition:</p> <ul style="list-style-type: none"> • House – white coloured paint on exterior wood finishing (trim, etc.) (3 sq. m flaking) • Office Building – white coloured paint on interior wood siding (20 sq. m flaking) • Pier Building – white coloured paint on exterior doors (2 sq. m flaking) <p>Refer to Section 3.5.2 for details.</p> <p>Paint applications with lead concentrations identified to be less than 90 ppm were observed to be in poor condition in various locations.</p> <p>Lead may also be present in the following materials:</p> <ul style="list-style-type: none"> • Older electrical wiring materials and sheathing • Solder used on domestic water lines • Solder used in bell fittings for cast iron pipes • Solder used in electrical equipment • Ceramic tile glaze • Vent and pipe flashings



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Building Materials	Comments
Mercury	<p>Mercury is likely to be present in the fluorescent light tubes observed in the following locations:</p> <ul style="list-style-type: none"> • House – six fluorescent light tubes • Office Building – six fluorescent light tubes • Pier Building – six fluorescent light tubes <p>Mercury may also be present in some paints and adhesives.</p>
Silica	<p>The presence of silica in building materials such as concrete, vinyl floor finishes, ceramic tile, ceiling tile, interior wall finishes etc. was noted in the subject buildings.</p>
Polychlorinated Biphenyls (PCBs)	<p>A total of two samples of caulking suspected to be PCB-containing were analysis. Based on the laboratory analysis of these caulking materials, PCB concentrations were none detected.</p> <p>Polychlorinated Biphenyls are not suspected to be present in the light ballasts within the fluorescent light fixtures in the Pier Building, as the light fixtures observed had T8 light tubes which use electronic ballasts.</p> <p>PCBs may be present in the fluorescent light ballasts of 12 total light fixtures in the House and Office Building. The ballasts could not be inspected at the time of the assessment as they were not accessible for health and safety reasons.</p> <p>Polychlorinated Biphenyls may also be present in dielectric fluid filled electrical equipment such as motors or pumps, capacitors or transformers, plastics, molded rubber parts, applied dried paints, coatings or sealants, caulking, adhesives, paper, sound-deadening materials, insulation, or felt and fabric products such as gaskets.</p>
Ozone-Depleting Substance (ODS)	<p>The following equipment was identified by labels to be ODS-containing:</p> <ul style="list-style-type: none"> • House – One Lennox HVAC unit (R-22)
Mould	<p>Three bulk samples of substrates/surfaces suspected to be mould-impacted were collected. Laboratory results of these samples indicated the absence of fungal growth.</p> <p>Water damaged building materials were observed in the following locations:</p> <ul style="list-style-type: none"> • House – water damaged drywall (2 sq. m) was observed on the ceiling of washroom 2 • Office Building – water damaged fiberglass insulation (20 sq. m) was observed on the locker room wall • Office Building – water stained ceiling tiles (4 ceiling tiles) was observed within office 1
Urea Formaldehyde Foam Insulation (UFFI)	<p>Evidence of the application of UFFI was not observed.</p>
Radioactive Sources	<p>Evidence of radioactive sources was observed in the form of smoke detectors.</p>
Chemical, Fuel Oil and/or Waste Oil Storage	<p>The following hazardous chemicals were observed within the subject buildings:</p> <ul style="list-style-type: none"> • House – two fire extinguishers • Office Building – one fire extinguisher



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Building Materials	Comments
	<ul style="list-style-type: none">• Pier Building – eight fire extinguishers• Pier Building – one compressor• Pier Building – one chemical cabinet containing motor oil, paints, insecticide, spray cans and lubricants• Garden Shed – four unlabelled drums• Garden Shed – chemical cabinets containing motor oils, gasoline, diesel, antifreeze and liquified petroleum gas
Other Designated Substances	Acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxides, isocyanates, and vinyl chloride are not typically a concern in building materials, and therefore these substances were not investigated.

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

Recommendations pertaining to the handling, removal, disposal and management of identified designated substances and hazardous building materials are provided within this report.



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Introduction
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1.0 INTRODUCTION

Stantec Consulting Ltd. (Stantec) was commissioned by Public Works and Government Services Canada (PWGSC) to conduct a designated substances and hazardous building materials assessment for the demolition of four buildings (subject buildings) located at the Search and Rescue (SAR) Station (the site) in Cobourg, Ontario. The purpose of the assessment was to identify potential designated substances and hazardous building materials that may require special attention prior to the planned demolition of the following four buildings:

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The work was carried out in accordance with the requirements of the PSPC Asbestos Management Standard, PSPC Management Directive, Canada Labour Code Part II (The Code), Canada Occupational Health and Safety Regulations (COHSR), The National Joint Council (NJC) Occupational Health and Safety Directive (OHS Directive) and provincial regulations including Ontario Regulation 278/05 Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations, as amended (O. Reg. 278/05), made under the Occupational Health and Safety Act (OHSA).

The designated substances assessment list includes those substances designated under the OHSA and included (but were not limited to) asbestos, lead, mercury and silica as the most likely to be present. In addition to designated substances, the hazardous building materials considered in this assessment included: polychlorinated biphenyls (PCBs); ozone-depleting substances (ODSs); urea-formaldehyde foam insulation (UFFI); mould; fuel oil and/or waste oil storage; chemical storage; and radioactive sources.

The site work was conducted by Ronald Ng on December 16-18, 2019.

1.1 UNDERSTANDING OF THE PROJECT

PWGSC commissioned this assessment as a measure of diligence in maintaining compliance with federal and provincial regulations pertaining to the identification of designated substances and hazardous materials prior to demolition of the four buildings located on the site. Designated substances and hazardous building materials may be present including, but not limited to asbestos, lead, mercury, silica, PCBs, ODSs and mould.



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2.0 SCOPE

The scope of work for this assessment involved the following:

- A review of existing information, including site drawings, previous assessment and/or abatement documentation and discussions with site personnel, where available
- A visual assessment of readily accessible areas for the presence of designated substances and hazardous building materials
- The collection of representative bulk samples from building materials suspected of containing asbestos fibres
- The collection of paint chip samples for the determination of the lead content in paint finishes
- The collection of bulk samples of suspected mould impacted building materials
- The collection of caulking materials for the determination of PCB content
- Submission of samples collected for laboratory analysis
- Evaluation and interpretation of field findings and previous analytical results to develop conclusions and recommendations pertaining to designated substances and hazardous building materials identified to be present

2.1 LIMITATIONS

This report reflects observations made within areas accessed and results of analyses performed on specific materials sampled, as indicated herein. Analytical results reflect the sampled materials at the specific sampling locations.

Sampling is exclusive to suspected ACMs, mould, LCPs and PCBs. The assessment for the presence of other designated substances and hazardous building materials is visual in nature, and is conducted pertaining to readily visible surfaces within accessible spaces only. Concealed spaces are assessed via existing access panels, where present. Interior and exterior finishes, solid ceilings, walls, flooring and structural elements are not removed to access concealed areas.

There are specific limitations to the information that can be provided to each hazardous building material considered in this assessment. This is due to limitations on the agreed scope of work for this project, as well as physical limitations in accessing concealed areas and limitations associated with working in occupied/operational spaces. As outlined below, the presence and the asbestos content of some building materials can neither be confirmed nor denied.

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

- Sub-grade materials (e.g., asbestos cement drainage pipe)
- Flooring material concealed beneath carpeting, ceramic tile, hardwood flooring, and/or concealed beneath existing sub-floors



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- Insulation material present inside walls (e.g., suspected asbestos-containing vermiculite insulation inside concrete block and/or brick walls)
- Drywall and/or wall plaster and associated finish materials concealed behind new and/or additional walls
- Woven tape inside duct connection joints
- Mechanical (e.g., piping and ducting) insulation within wall cavities, crawl spaces tunnels or other concealed or confined spaces
- Insulation materials inside building materials, including fire doors and window frames
- Heating, ventilation and air conditioning (HVAC) units mechanical inner linings and/or inner ducting insulation
- Heat protection and insulating materials inside mechanical and electrical installations and light fixtures
- Ceramic tile grout and mortar/adhesive concealed behind ceramic tiles

Samples of paint applications suspected to contain lead are collected from surfaces of major paint applications where visually different paint colours and/or types are identified. Although the surfaces where samples are collected may be covered with more than one coat of paint, the paint samples are described by the surface (visible) colour only. Attempts are made to represent all layers of paint in the samples collected. As analytical results are referenced to the surface paint colour only, the lead content of all painted surfaces similar to that represented by the surface paint colour will be presumed to be the same, regardless of differing sub surface paints, if any.

The presence of mercury or mercury-containing equipment in inaccessible areas or as internal parts of HVAC mechanisms or other equipment, are not assessed.

Due to height restrictions and the risk of electrical shock in handling operational light fixtures, ballasts present in fixtures observed are not inspected for PCB labels or other PCB identifiers. Conclusions and recommendations regarding the presence of PCBs are based on limited observations and information provided regarding lighting renovations and is presented to provide guidance regarding the likelihood that PCB-containing equipment is or is not present. The exact extent and/or number of fluorescent lamp ballasts containing PCBs, if any, are not commented on.

The assessment is limited to a visual review in accessed areas of readily accessible building-related cooling and refrigeration equipment which could contain ODSs; testing is not conducted. Equipment or materials that are not included as part of this assessment, but that may contain ODSs include: flexible plastic foam or rigid insulation foam, solvents, aerosol spray propellants and fire extinguishing equipment.

Visual assessment for the presence of suspected visible mould and/or suitable conditions for mould growth (e.g., moist and/or water-stained building materials) is conducted. The conclusions made in this report provide description(s) of the potential source(s) of moisture that may have led to suitable conditions for mould growth, only in those cases where potential source(s) of moisture were identified. The visual assessment does not include an intrusive assessment. These conclusions will not necessarily identify all sources of moisture leading to suitable conditions for mould growth within the impacted area(s). This assessment does not constitute a building envelope/building systems assessment, which would include



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an intrusive investigation to assess the internal condition, potential moisture sources, and expected remaining service life of the various components and systems comprising the envelope of a building.

In general, the assessment for the presence of other designated substances and hazardous building materials is visual in nature, and is conducted pertaining to readily visible surfaces within accessible accessed spaces only. The potential presence of hazardous building materials in inaccessible areas which are not assessed includes, but is not limited to: ceiling spaces, wall cavities, crawl spaces, and buried materials.



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3.0 DESIGNATED SUBSTANCES AND HAZARDOUS BUILDING MATERIALS ASSESSMENT

The results of the assessment for each of the considered designated substances and hazardous materials are provided in the following sub-sections. Refer to **Appendix A** for regulatory framework and relevant legislation with respect to designated substances and hazardous building materials.

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

3.1 FACILITY DESCRIPTION

The Search and Rescue Station (SAR Station) is located in Cobourg, Ontario, on the North shore of Lake Ontario. The SAR Station is operated seasonally and consists of four primary structures; the main residence building (House), a secondary office (Office Building), workshop (Pier Building) and shed (Garden Shed). A small brick building is also present on the site and was not included as part of this assessment.

The reported construction date of the House is the 1960s with an addition added onto the south side of the building in 1990. The typical structural components and finishes associated with this building consist of a vinyl siding exterior with poured concrete foundation, various types of flooring including vinyl floor tile, vinyl sheet flooring, wood and carpet flooring and interior plaster, drywall and wood panel walls with suspended ceiling tile, plaster and drywall ceilings.

The reported construction date of the Office Building is unknown. The typical structural components and finishes associated with this building consist of a vinyl siding and wood exterior, various types of flooring including concrete and carpet flooring and interior wood board walls with drywall and wood deck ceilings.

The reported construction date of the Pier Building is unknown. The typical structural components and finishes associated with this building consist of a vinyl siding exterior, concrete flooring and interior plywood/particle board walls and ceiling.

The reported construction date of the Garden Shed is unknown. The typical structural components and finishes associated with this building consist of a vinyl siding exterior, concrete flooring and interior plywood walls and ceiling.

3.2 DOCUMENT REVIEW

The following documentation was reviewed prior to undertaking the assessment:

- Asbestos Air Sampling for Fibres, Search and Rescue Station (SAR), Cobourg, Ontario, Public Works and Government Services Canada (PWGSC), dated January 17, 2019 and prepared by Stantec Consulting Ltd.



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- Statement of Work: Designated Substances and Hazardous Materials Survey, DFO's Search and Rescue Station at Cobourg, dated May 30, 2019, and prepared by Public Works and Government Services Canada.
- Project Brief for PHASE 1: Geotechnical Investigation, Department of Fisheries and Oceans (DF), Canadian Coast Guard (CCG), Cobourg Search and Rescue Station (SAR), 114 Division Street, Cobourg, ONT, K9A-3P3, New Search and Rescue Station (SAR), Project No. R.084112.001, dated February 17, 2017 and prepared by Public Works and Government Services Canada.
- Air Sampling Summary Letter, Cobourg Search and Rescue Site, 114 Division Street, Cobourg, Ontario, Pinchin File 90338.001, dated May 26, 2014, and prepared by Pinchin Environmental Ltd.
- Hazardous Building Materials Assessment, Search and Rescue Buildings, 114 Division Street, Cobourg, Ontario, dated March 13, 2014, and prepared by Pinchin Environmental Ltd.
- Environmental Assessment Screening Report, Aboveground Storage Tank Upgrades at the Cobourg Search and Rescue Station, Cobourg, Ontario, dated June 2010, and prepared by Public Works and Government Services Canada, Environmental Services, Ontario Region.
- *Building Condition Report, Fisheries and Oceans Canada, Search and Rescue Station, Cobourg, Ontario*, dated November 2001, and prepared by Maintenance Management Services, PWGSC/RPS/AES-AFMS, Ontario Region.

This documentation provided Stantec with an understanding of asbestos-containing materials that are anticipated to be present at the site.

3.3 PROJECT-SPECIFIC LIMITATIONS

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

- House – addition attic (access hatch blocked)
- House – crawlspace beneath building (confined space)

Glue associated with 12"x12" wood fibre tiles, which were assumed to be asbestos-containing per the following report, was found to not be present (ceiling tiles affixed by staples):

- *Hazardous Building Materials Assessment, Search and Rescue Buildings, 114 Division Street, Cobourg, Ontario*, dated March 13, 2014, and prepared by Pinchin Environmental Ltd.

3.4 ASBESTOS

Floor plans showing the locations of ACMs and bulk samples are provided in **Appendix C**. A summary list of the bulk samples that were collected including a description of the material, sampling location, type of analysis and laboratory test results is provided in **Appendix D**.

A summary of occurrences of ACMs is provided in **Appendix E**. Each occurrence includes the following information:

- Room component that contains ACM



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- Location of the ACM within the room space
- ACM description
- Estimated quantity
- Original sample number or representative sample number
- Friability
- Condition

A copy of the laboratory Certificate of Analysis is provided in **Appendix F**. The evaluation criterion for assessing ACMs is provided in **Appendix K**.

3.4.1 Methodology

A visual assessment of accessible areas was undertaken in order to check for the presence of materials suspected of containing asbestos. Locations to collect discrete bulk asbestos samples of suspect building materials were identified. Samples of representative materials were then collected at these locations.

A visual assessment of the condition and accessibility was completed for each occurrence of an ACM. The Public Services and Procurement Canada (PSPC) document entitled *Asbestos Management Standard* (June 5, 2017) was used as the basis for the criteria that was applied in evaluating the presence of ACMs, where applicable.

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

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

3.4.2 Findings

3.4.2.1 Asbestos-Containing Materials

Building materials suspected to be asbestos-containing have been identified to be asbestos-containing by laboratory analysis and were observed in the form of:

House

- Vermiculite insulation (Attic)
- Vinyl floor tiles – beige (Living Room, Hallway, Bedroom 1, Bedroom 2, Bedroom 3)
- Exterior window glazing compound – black (Kitchen, Laundry Room)



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Office Building

- Exterior window glazing compound – black (Throughout)

These materials were observed to be in good condition.

3.4.2.2 Presumed Asbestos-Containing Materials

Presumed asbestos-containing building materials were not observed to be present.

3.4.2.3 Non-Asbestos-Containing Materials

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

3.4.2.4 Potential for Vermiculite Insulation

Asbestos-containing vermiculite is present as insulating material in the attic space of the house and may also be present in masonry (concrete) blocks. Based on building construction, vermiculite is not suspected to be present in the Office Building, Pier Building, or Garden Shed.

Asbestos-contaminated vermiculite was historically used as insulating material in masonry block or brick walls. Although concrete blocks were not observed in the accessible areas during the assessment, concrete blocks could potentially be present in the crawlspace beneath the house. This area of the house was inaccessible due to health and safety reasons related to confined space entry.

Should concrete block walls be uncovered and to assess for this potential ACM, destructive sampling is required.

3.4.3 Recommendations

The disturbance of asbestos-containing materials on construction and demolition projects is governed by the *Occupational Health and Safety Regulations*, *PSPC Asbestos Management Standard*, and O. Reg. 278/05. These regulations classify asbestos disturbances as Type 1 (Low Risk), Type 2 (Moderate Risk) and Type 3 (High Risk) and define the precautionary measures and handling and disposal precautions for each type of operation.

Based on the visual assessment and laboratory analysis, Stantec recommends the following:

- Asbestos-containing vermiculite insulation in the House attic should be removed following, at minimum, Type 3 (High Risk) abatement operations prior to demolition.
- Asbestos-containing vinyl floor tiles – beige in the House bedrooms 1-3, hallway 1 and the living room should be removed following, at minimum, Type 1 (Low Risk) abatement operations prior to demolition.



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- Asbestos-containing exterior window glazing compound – black on the House exterior kitchen and laundry room windows should be removed following, at minimum, Type 1 (Low Risk) abatement operations prior to demolition.
- Asbestos-containing exterior window glazing compound – black on the Office Building exterior windows should be removed following, at minimum, Type 1 (Low Risk) abatement operations prior to demolition.
- If masonry block walls are to be demolished or impacted, and these walls have not been checked for the presence of vermiculite insulation, destructive action should be preceded by assessment for vermiculite. If filled with vermiculite insulation, this material should be treated as an ACM until testing can verify the asbestos content.
- Should a material suspected to contain asbestos fibres become uncovered during the project, all work in the areas that may disturb the material should be stopped. Samples of the suspect material should be submitted for laboratory analysis to determine if asbestos fibres are present.

A list of the locations and quantity of ACMs and PACMs are provided in the occurrence report in **Appendix E**.

The following are Type 1 (Low Risk) operations:

- Installing or removing non-friable asbestos-containing material other than ceiling tiles if the material is installed or removed without being broken, cut, drilled, abraded, ground, sanded or vibrated.
- Breaking, cutting, drilling, abrading, grinding, sanding, or vibrating of non-friable materials if the work is wetted to control the spread of dust and done by means of non-powered hand tools.
- Removing less than one square metre of drywall in which joint-filling compounds that are asbestos-containing material have been used.

The following are Type 2 (Moderate Risk) operations:

- Removing one square metre or more of drywall in which joint filling compounds that are asbestos containing have been used.
- The removal of one square metre or less of friable asbestos-containing material during the repair, alteration, maintenance or demolition of all or part of machinery or equipment or a building, aircraft, locomotive, railway car, vehicle or ship
- Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material if,
 - The material is not wetted to control the spread of dust or fibres
 - The work is done only by means of non-powered hand-held tools
- Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material if the work is done by means of power tools that are attached to dust-collecting devices equipped with HEPA filters.



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The following are Type 3 (High Risk) operations:

- The removal or disturbance of more than one square metre of friable asbestos-containing material during the repair, alteration, maintenance or demolition of all or part of a building, aircraft, ship, locomotive, railway car or vehicle or any machinery or equipment.
- Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material, if the work is done by means of power tools that are not attached to dust-collecting devices equipped with HEPA filters.

3.5 LEAD

A summary list of the samples collected including a description of the samples, sampling locations and laboratory analytical results is provided in **Appendix G**. The sampling locations are indicated on the floor plans provided in **Appendix C**.

A copy of the laboratory Certificate of Analysis for the paint chip testing is included in **Appendix H**.

3.5.1 Methodology

A visual assessment of accessible areas was undertaken in order to check for the presence of materials that may contain lead. These materials included paint applications, wiring and plumbing etc.

Representative paint samples were collected and submitted to EMSL Canada Inc. (EMSL) located in Mississauga, Ontario for lead content analysis by Flame Atomic Absorption Spectrophotometry, following US EPA Method No. 7420.

The sampling of paint applications involved the collection of paint chip samples of paint layers to the substrate. A minimum volume of 5 cc or ½ teaspoon of paint chips was typically collected. Wherever necessary and possible, paint was separated from any backing material such as paper, concrete or wood and placed in a sealed clearly labelled plastic bag.

PWGSC uses the *Surfacing Coating Materials Regulation SOR/2016-193* limit of 90 ppm as the criteria to manage paint applications.

3.5.2 Findings

Twenty-two samples of major paint applications were collected in the form of paint chip samples and submitted to EMSL for lead content analysis.

A copy of the laboratory Certificate of Analysis for the lead paint chip testing is provided in **Appendix H**. The sampling locations are indicated on the floor plans provided in **Appendix C**.

A summary list of the locations of paint applications observed during the assessment including their lead content and condition are provided in the tables below.



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Based on the laboratory results, the following paint applications contain lead in concentrations greater than 90 ppm:

Table 2: Lead Containing (>90 ppm of Lead) Paint Applications

Building	Sample Number	Description	Specific Sample Location	Lead Concentration (ppm)	Condition	Approximate Quantity	Damaged Quantity
House	House-PS-01	white coloured paint	exterior wood finishing (trim, etc.)	4,000	poor (flaking)	8 m ²	8 m ²
	House-PS-08	white coloured paint	bedroom 2, door frame	150	good	100 m ²	-
	House-PS-09	brown coloured paint	bedroom 2, closet, door frame	99	good	50 m ²	-
Office Building	Office-PS-07	white coloured paint	locker room, wood siding	160,000	poor (flaking)	140 m ²	20 m ²
Pier Building	Pier-PS-01	white coloured paint	storage room 2, door	310	poor (flaking)	40 m ²	1-2 m ²
	Pier-PS-02	white coloured paint	workshop, wall	170	good	60 m ²	-

The following paint applications were identified to be lead-containing:

- White coloured paint on exterior wood finishing (trim, etc.) – House
- White coloured paint on interior wood finishing (trim, etc.) and plaster ceilings – House
- Brown coloured paint on interior door frames, shelves, and walls of Bedroom 2 – House
- White coloured paint on wood siding in locker room – Office Building
- White coloured paint on wood siding beneath exterior vinyl siding – Office building
- White coloured paint on interior and exterior doors and door frames – Pier Building
- White coloured paint on interior wood board walls and ceiling – Pier Building

These paint applications should be removed following lead precautions prior to demolition.

Paint applications with lead concentrations identified to be less than 90 ppm were observed to be in poor condition in various locations.

Lead may also be present in the following materials:

- Other coating applications not tested
- Lead-acid batteries used in emergency lighting



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- Older electrical wiring materials and sheathing
- Solder used on domestic water lines
- Solder used in bell fittings for cast iron pipes
- Solder used in electrical equipment
- Ceramic tile glaze
- Vent and pipe flashings

3.5.3 Recommendations

The *EACO lead Guideline for Construction, Maintenance or Repair*, dated October 2014 sets out requirements when disturbing any lead-containing paints. The document outlines the following with respect to lead: Legal Requirements, Health Effects, Controlling the Lead Hazard, Classification on Work (Class 1, Class 2, Class 3) and Measures and Procedures for Working with Lead.

Minimum lead precautions are to be followed when performing the following Class 1 operations on lead-containing or lead-based paint applications.

- Removal of lead-containing or lead-based coatings with a chemical gel or paste and fibrous laminated cloth wrap.
- Removal of lead-containing or lead-based coatings or materials using a power tool with an effective dust collection system equipped with a HEPA filter.
- Removal of lead-containing or lead-based coatings or materials with non-powered hand tool, other than manual scraping and sanding.

Moderate lead precautions are to be followed when performing the following Class 2 operations on lead-containing or lead-based paint applications.

- Removal of lead-containing or lead-based paints using a power tool that has an effective dust collection system equipped with a HEPA filter.
- Removal of lead-containing or lead-based paint from by scraping or sanding using non-powered hand tools.

Maximum lead precautions are to be followed when performing the following Class 3 operations on lead-containing or lead-based paint applications.

- Removal of lead-containing or lead-based paint from using power tools without an effective dust collection system equipped with HEPA filter.
- Abrasive blasting of lead-based paint.

The work tasks required and the ways in which lead based paints will be impacted will determine the appropriate respirators, measures and procedures that should be followed to protect workers from lead exposure, and protect the natural environment including soils, water, and other adjacent surfaces. This is to be determined by the Contractor through their own Risk Assessment.



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Actions that will disturb lead-containing or lead-based materials, including paints and materials are to be conducted in such a manner to keep airborne exposure to lead dust to less than limit in O. Reg. 490/09 respecting Designated Substances - Lead made under the Occupational Health and Safety Act as amended by O. Reg. 148/12 and O. Reg. 149/12.

Prior to removal from the site and disposal, materials containing lead should be subject to toxicity characteristic leaching procedure (TCLP) testing to determine toxicity with respect to lead prior to disposal in accordance with R.R.O. 1990, Regulation 347 General - Waste Management, as amended (R.R.O. 1990, Reg. 347) under the Environmental Protection Act (EPA). If TCLP testing is not completed, contractor to assume paint to be disposed of as lead waste.

3.6 MERCURY

3.6.1 Methodology

A visual assessment for the presence of mercury-containing equipment was conducted.

3.6.2 Findings

Mercury is likely to be present in fluorescent light tubes observed in the following buildings:

- House – six fluorescent light tubes
- Office Building – six fluorescent light tubes
- Pier Building – six fluorescent light tubes

Mercury containing thermostats were not observed at the time of the assessment. Mercury may also be present in some paints and adhesives.

3.6.3 Recommendations

Mercury vapour within light fixtures poses no risk to workers or occupants provided the mercury containers remain intact and undisturbed. Complete removal of mercury-containing equipment is required prior to demolition activities that may disturb the equipment. Prior to demolition work or renovation, the light tubes must be removed and stored in a safe, secure location or disposed of following the requirements of *R.R.O. 1990, Regulation 347 General - Waste Management*, as amended (R.R.O. 1990, Reg. 347) under the EPA.

Mercury in paints and adhesives is not expected to cause a hazard during the renovation activities. No further action is needed. Precautions taken for lead abatement will be sufficient to control exposure to other heavy metals including mercury.

As evidence of mercury equipment was not observed, no further actions are needed.



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3.7 SILICA

3.7.1 Methodology

An assessment for the presence of silica was conducted. The presence of silica in building materials such as concrete, masonry, stone, terrazzo, refractory brick, ceramic tile, ceiling tile etc. was noted.

3.7.2 Findings

Silica is expected to be present in concrete, vinyl floor finishes, ceramic tile, ceiling tile, and interior wall finishes observed within the subject buildings.

3.7.3 Recommendations

The Guideline: Silica on Construction Projects issued by the MOL, dated April 2011 outlines: legal requirements, health effects, controlling the silica hazard, classification on work and measures, and procedures for working with silica and should be followed during disturbance of silica-containing materials.

The Guideline defines the classification of work. It is the classification of the work that determines the appropriate respirators, measures and procedures that should be followed to protect the worker from silica exposure. In the guideline, silica-containing construction operations are classified into three groups, Type 1, Type 2, and Type 3 operations, and can be thought of as being of low, medium, and high risk. From Type 1 to Type 3 operations, the corresponding respirator, and measures and procedures become increasingly stringent.

Precautions should be taken as required during renovation projects impacting materials expected to contain silica (i.e., concrete block walls and drywall) where dust may be generated. Whenever practical changing how a process is performed to lower the silica exposure is preferable. Wet methods reduce dust and should be used whenever practical, particularly in cutting, grinding, and drilling operations.

Silica is included in O. Reg. 490/09 and the regulation provides information on the application of the regulation as well as allowable exposure levels, where the maximum TWA for respirable airborne silica (cristobalite) is 0.05 mg/m³ and 0.10 mg/m³ for quartz/Tripoli. However, the more stringent level of 0.025 mg/m³ for respirable crystalline silica (quartz, cristobalite) applies as noted in the ACGIH 2018 TLVs for Chemical Substances and Physical Agents. The assessment and control program and medical surveillance requirements are for non-construction projects as defined in O. Reg. 490/09.



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3.8 POLYCHLORINATED BIPHENYLS

3.8.1 Methodology

A visual review for the presence of PCBs in electrical equipment is completed. Equipment that is generally suspected of containing PCBs includes lamp ballasts, transformers, hydraulic systems, compressors, switchgear and capacitors.

Representative caulking samples are collected and submitted to EMSL Analytical, Inc., located in Cinnaminson, New Jersey for analysis of PCBs as Aroclors, following U.S. EPA 3540C/8082A Method.

Subsection 93(1) of the *Canadian Environmental Protection Act*, (CEPA), Federal PCB regulations have been published by the Canada Gazette Part II (SOR/2008-273) stating that PCBs may not enter into the environment in a concentration of 2 mg/kg for liquids and 50 mg/kg for solids.

3.8.2 Findings

Two caulking samples were collected and submitted to EMSL for analysis of PCB content. Sampling locations are indicated on the floor plan provided in **Appendix C**. A copy of the laboratory Certificate of Analysis is provided in **Appendix J**.

Table 3: PCB Sampling Results

Sample Number	Sample Description	Sample Location	Analytical Results (mg/kg)
House-PCB-01	exterior window caulking – white	House – exterior window	None Detected
Office-PCB-01	exterior window caulking – white	Office Building – exterior window	None Detected

Polychlorinated Biphenyls are not suspected to be present in the light ballasts within the fluorescent light fixtures in the Pier Building, as the light fixtures observed had T8 light tubes which use electronic ballasts.

Polychlorinated Biphenyls may be present in the light ballasts of the 12 total light fixtures observed in the House and Office Building. As the ballasts were energized, they could not be inspected at the time of the assessment for health and safety reasons.

Polychlorinated Biphenyls may also be present in dielectric fluid filled electrical equipment such as motors or pumps, capacitors or transformers, plastics, molded rubber parts, applied dried paints, coatings or sealants, caulking, adhesives, paper, sound-deadening materials, insulation, or felt and fabric products such as gaskets.



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3.8.3 Recommendations

When decommissioned, verify the PCB content of fluorescent lamp ballasts as per the Environment Canada publication *Identification of Lamp Ballasts Containing PCBs*, 1991. Handle, store and dispose of PCB-containing ballasts in accordance with Federal Regulation SOR/2008-273, under CEPA and R.R.O. 1990, Reg. 362.

Should a material suspected to contain PCBs become uncovered during demolition activities (i.e., dielectric fluids, hydraulic fluids), all work in the areas that may disturb the material should be stopped. Samples of the suspect material should be submitted for laboratory analysis to determine if PCBs are present. Confirmed PCBs should be handled in accordance with Federal Regulation SOR/2008-273 and R.R.O. 1990, Reg. 362, under the EPA.

3.9 OZONE DEPLETING SUBSTANCES

3.9.1 Methodology

An assessment for equipment likely to contain ODSs was completed. Information on the type of equipment, manufacturer and type and quantity of refrigerants was recorded, where available.

3.9.2 Findings

The following equipment was identified by labels to be ODS-containing:

Equipment	Location	Refrigerant
Lennox HVAC Unit (1 unit)	House - exterior	R-22

Floor plans showing the locations of the confirmed ODS-containing equipment is provided in **Appendix C**.

3.9.3 Recommendations

Confirmed ODS-containing equipment identified can be managed in place and must be serviced by a licensed refrigeration technician prior to demolition.

When refrigeration equipment that is confirmed or suspected to be ODS-containing is decommissioned, it should be inspected by a refrigeration mechanic certified under Section 34 of O. Reg. 463/10 of the EPA. Additional requirements apply if any of the refrigerants present are or contain Class 1 ODS. Decommissioning and disposal of ODS containing equipment should be conducted in accordance with the Federal Halocarbon Regulations (SOR/2003-289) under CEPA 1999.



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3.10 MOULD

3.10.1 Methodology

An assessment for the potential presence of mould was completed. This involved a visual assessment of accessible surfaces for obvious evidence of mould, moisture or water damage.

Bulk samples were collected from materials that were visibly or potentially impacted by mould. Samples were submitted to Sporometrics Inc. (Sporometrics) of Toronto for laboratory examination (direct microscopic analysis) of the mould forms present. Sporometrics has been accredited by the American Industrial Hygiene Association (AIHA) Environmental Microbiology Laboratory Accreditation Program and participates in the AIHA Environmental Microbiology Proficiency Analytical Testing (EMPAT) Program.

3.10.2 Findings

Three bulk samples of suspect mould-impacted materials were collected. The laboratory results are noted in Table 5, below. A copy of the laboratory Certificate of Analysis for the mould bulk sampling is provided in **Appendix I**. The sampling locations are indicated on the floor plans provided in **Appendix C**.

Table 4: Mould Bulk Sample Results

Sample Number	Location	Fungal Identification	Rating	Growth Indicated
Office-M-01	Office Building – storage room – partition wall	<i>Chaetomium</i> NOS mycelia <i>Chaetomium</i> NOS spores <i>Cladosporium</i> NOS mycelia <i>Cladosporium</i> NOS spores <i>Stachybotrys</i> NOS mycelia <i>Stachybotrys</i> NOS spores	- - - - - -	N
Office-M-02	Office Building – storage room – exterior wall	<i>Chaetomium</i> NOS mycelia <i>Chaetomium</i> NOS spores <i>Cladosporium</i> NOS mycelia <i>Cladosporium</i> NOS spores <i>Stachybotrys</i> NOS mycelia <i>Stachybotrys</i> NOS spores	- tr - tr - tr	N
Office-M-03	Office Building – locker room – exterior wall, insulation	<i>Chaetomium</i> NOS mycelia <i>Chaetomium</i> NOS spores <i>Cladosporium</i> NOS mycelia <i>Cladosporium</i> NOS spores <i>Stachybotrys</i> NOS mycelia <i>Stachybotrys</i> NOS spores	- - - - - -	N



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Key:

- = not detected

tr = $10^0 - 10^1$ elements in total

1+ = $10^0 - 10^1$ elements in each of ~25% fields

2+ = $10^1 - 10^2$ elements in each of ~50% fields

3+ = $10^2 - 10^3$ elements in each of ~75% fields

4+ = >75% fields obscured

Possibility of fungal growth *in situ* based on microscopic observations; Y = yes; N = no; ? = ambiguous.

The laboratory analysis of samples obtained from suspect substrates indicated the absence of fungal growth. However, signs of water staining were observed on the exterior and partition walls of the storage room.

Water damaged building materials were observed in the following locations:

- House – water damaged drywall (2 sq. m) was observed on the ceiling of washroom 2
- Office Building – water damaged fiberglass insulation (20 sq. m) was observed on the locker room wall
- Office Building – water stained ceiling tiles (4 ceiling tiles) was observed on the ceiling of office 1

3.10.3 Recommendations

Moisture damaged building materials should be handled in accordance with the documents entitled:

- CCA Mould Guidelines for the Canadian Construction Industry, dated 2004
- EACO Mould Abatement Guidelines, Edition 3, dated 2015

Remediation should be done by a competent person, who is knowledgeable of potential hazards of mould exposure, following remediation precautions.

Should suspect mould be observed or uncovered, a mould assessment should be undertaken to determine the extent of suspect mould impacted and/or moisture damaged building materials and the likely source(s) of moisture.

3.11 UREA FORMALDEHYDE FOAM INSULATION

3.11.1 Methodology

An assessment for the potential presence of UFFI was completed. This involved the assessment of exterior and interior walls for evidence of repaired openings (i.e., nozzle holes) made to facilitate the installation of the insulation. Wherever possible, an assessment of wall cavities through existing openings was made.

3.11.2 Findings

Evidence of the application of UFFI was not observed to be present.



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3.11.3 Recommendations

As evidence of the application of UFFI was not observed, no recommendations have been provided.

3.12 RADIOACTIVE SOURCES

1.1.1 Methodology

An assessment for the presence of radioactive sources within smoke detectors was completed.

1.1.2 Findings

Smoke detectors were observed at the time of the assessment.

1.1.3 Recommendations

Most household detectors contain a very small amount of americium-241, a radioactive isotope. The slight amount of radiation that can be measured outside the unit does not pose any health risk. This is a normal occurrence for residential smoke detectors. The average annual radiation dose from smoke detectors per person represents 0.01 percent of the dose they receive from natural background radiation. The safe encapsulation and low amount of radioactive material make these devices completely safe under all conditions, even during or after a fire.

3.13 FUEL OIL AND/OR WASTE OIL STORAGE AND CHEMICAL STORAGE

3.13.1 Methodology

An assessment for the presence of fuel oil and or waste oil storage and chemical storage was completed.

3.13.2 Findings

The following hazardous chemicals were observed within the subject buildings:

- House – two fire extinguishers
- Office Building – one fire extinguisher
- Pier Building – eight fire extinguishers
- Pier Building – one compressor
- Pier Building – one chemical cabinet containing motor oil, paints, insecticide and lubricants
- Garden Shed – four unlabelled drums
- Garden Shed – two chemical cabinets containing motor oils, gasoline, diesel, antifreeze and liquified petroleum gas

Unlabelled containers are presumed to contain hazardous contents.



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3.13.3 Recommendations

The chemicals, fuel oil, waste oil and unlabeled drums shall be removed from site prior to demolition activities.

Chemicals, fuel oil and/or waste oil should be handled/stored in accordance with the documents entitled:

- Fire Protection and Prevention Act, 1997
- Occupational Health and Safety Act
- National Fire Code of Canada – Part 3 (indoor and outdoor storage of combustible products and dangerous goods) and Part 4 (indoor and outdoor storage of flammable and combustible liquids)

Chemicals, fuel oil and/or waste oil should be stored in a manner to ensure that spills and accidental losses of chemicals and/or wastes are contained.

3.14 OTHER DESIGNATED SUBSTANCES: ACRYLONITRILE, ARSENIC, BENZENE, COKE OVEN EMISSIONS, ETHYLENE OXIDES, ISOCYANATE, VINYL CHLORIDE

3.14.1 Methodology

Designated substances including acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxides, isocyanates, and vinyl chloride are not typically a concern in building materials, and therefore these substances were not investigated. However, some common sources are shown below.

Acrylonitrile may be present in stable form in paints and adhesives.

Arsenic or arsenic compounds may be present in paints and adhesives.

Benzene as a constituent of hydrocarbon-based mixtures and is present in a stable form in roofing materials, paints and adhesives. Benzene in these forms is not expected to be of a worker exposure concern.

Uncured Isocyanate may be present in paint finishes, varnishes, polyurethane plastics, synthetic rubbers, foams and adhesives.

Vinyl chloride (monomer) is generally likely to be present in stable form within the PVC piping and conduits, where applicable.



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4.0 CLOSURE

This report has been prepared for the sole benefit of the Public Works and Government Services Canada. The report may not be used by any other person or entity without the express written consent of Stantec Consulting Ltd. and Public Works and Government Services Canada.

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

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

The conclusions presented in this report represent the best technical judgment of Stantec Consulting Ltd. based on the data obtained from the work.

The conclusions are based on the site conditions encountered by Stantec Consulting Ltd. at the time the work was performed at the specific assessment and/or sampling locations, and can only be extrapolated to an undefined limited area around these locations. The extent of the limited area depends on building construction and conditions, weather, building usage and other factors. Due to the nature of the investigation and the limited data available, Stantec Consulting Ltd. cannot warrant against undiscovered environmental liabilities.

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



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

This report was prepared by Will Madden-Macavelia and reviewed by Matthew Magnus and Martin Ling.

Regards,

STANTEC CONSULTING LTD.

Matthew Magnus
Project Manager
Phone: 905 415 6387
Matthew.Magnus@stantec.com

Martin Ling
Associate
Phone: 905 415 6386
Martin.Ling@stantec.com

WMM/MM/ML/jt

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APPENDICES



APPENDIX A STANDARDS AND GUIDELINES



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APPENDIX A Standards and Guidelines
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DESIGNATED SUBSTANCES

Asbestos

Asbestos is typically found in plaster, mechanical insulation, gaskets, thermal insulation on pipes, refractory material, roofing felts, floor tiles, ceiling tiles and parging, heat resistant panels, incandescent light fixture reflector plates, and any other material requiring a high degree of durability or thermal resistance. The common use of potential (breakable by hand) asbestos-containing materials (ACMs) in construction ceased voluntarily in the mid-1970s; however, the spray application of asbestos-containing fireproofing was not prohibited until 1986.

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

On Federal sites, asbestos requirements in the PSPC Asbestos Management Standard, PSPC asbestos Management Directive, Canada Labour Code Part II (The Code), Canada Occupational Health and Safety Regulations (COHSR) and the National Joint Council (NJC) Occupational Health and Safety Directive (OHS Directive) will apply.

Ontario Regulation 490/09 Designated Substances (O. Reg. 490/09), as amended, under the Ontario Occupational Health and Safety Act (OHSA) primarily regulates worker exposure to asbestos during manufacturing of asbestos-containing products, but also includes requirements related to respiratory equipment, measurement of airborne fibres, and medical surveillance of exposed workers.

Ontario Regulation R.R.O 1990, Regulation 833, Control of Exposure to Biological or Chemical Agents, as amended (R.R.O. 1990, Reg. 833) made under the OHSA, sets the same time weighted average limit (TWA) value based on 8-hour work days.

Ontario Regulation 278/05 Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations (O. Reg. 278/05), as amended, made under the OHSA defines an ACM as a material that contains 0.5% per cent or more asbestos by dry weight. Ontario Regulation 278/05 requires that an Asbestos Management Program (AMP) be implemented in buildings that have been identified to contain asbestos.



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The general waste management regulation for the province of Ontario *R.R.O. 1990, Regulation 347 General - Waste Management*, as amended (R.R.O. 1990, Reg. 347) sets out the requirements for the proper disposal of asbestos waste in Ontario. The waste must be placed in a double sealed container, properly labelled, free of cuts, tears or punctures and disposed of at a licensed waste station which has been properly notified of the shipment(s) of asbestos waste. Asbestos waste must be hauled in a vehicle operating under a Certificate of Approval (CofA) from the Ontario Ministry of the Environment and Climate Change (MOECC). The vehicle must have a trained operator as well as an asbestos spill kit. The asbestos waste must be immediately buried at the licensed landfill operation operating under a CofA from the MOECC.

The transport of asbestos waste to the disposal site is covered by the federal *Transportation of Dangerous Goods Act*. Asbestos waste is to be transported in a proper vehicle with appropriate placards and transportation numbering.

Lead

Lead may be used in its pure metallic form or combined chemically with other elements to form lead compounds. Metallic lead is used to make products such as electric storage batteries, ammunition, lead solder, radiation shields, pipes, and sheaths for electric cables. Metallic lead is sometimes combined with other metals such as copper, tin and antimony as lead alloys for use in the manufacture of a variety of metal products.

Organic lead compounds contain a lead atom covalently bonded to carbon. Common examples of organic lead compounds include lead “soaps” such as lead oleates, high pressure lubricants, and anti-knock agents in gasoline.

Inorganic lead compounds (or lead salts) result when lead is combined with an element other than carbon. Examples are lead oxide, lead chromate, lead carbonate and lead nitrate. Inorganic lead compounds may occur as solids or in solutions, and are used in insecticides, pigments, paints, frits, glasses, plastics, and rubber compounds.

Lead may affect the health of workers if it is in a form that may be inhaled, ingested or absorbed through the skin. Lead dust consists of small, solid particles of metallic lead or lead compounds that are generated by sanding, grinding, polishing, and sawing operations. Lead fume is produced in significant amounts when solid lead or materials containing lead are heated to temperatures above 500° C, as in welding and flame cutting or burning.

The United States Department of Housing and Urban Development (HUD) set a criteria of lead-based paint as 0.5% lead (by weight) or 5,000 parts per million (ppm) for evaluating whether lead is a hazard in a residential setting.



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In Canada, the Surface Coating Materials Regulations (SOR/2005-109) under the Federal Hazardous Products Act provides a concentration of lead that must not be exceeded in surface coatings that are presently sold in this country. This value has been reduced from 600 ppm to 90 ppm. However, it is important to note that there is not a direct correlation between the concentration of lead in a material to the potential occupational exposure if the material is disturbed.

O. Reg. 490/09 (which does not apply to construction projects) and R.R.O. 1990 Reg. 833, an occupational exposure limit (OEL) for airborne lead dust or fumes has been set at the TWA value of 0.05 milligram per cubic metre of air (mg/m^3) for workers. The TWA represents the time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, to which it is believed that nearly all workers may be repeatedly exposed, day after day, without adverse health effects.

The EACO document entitled *Lead Guideline for Construction, Renovation Maintenance or Repair*, issued October 2014 sets out guidelines for operations involving the handling, application, removal, disturbance of clean-up of lead-containing materials. The guideline is intended for the environmental abatement industry, construction industry and painting industry in general and is based on industry standard best-practices for lead abatement and dust control measures.

The Ontario Ministry of Labour (MOL) document entitled *Guideline: Lead on Construction Projects*, issued by the MOL in April 2011, states that the removal of lead paint is not required unless work on these materials are likely to produce airborne lead dust or fumes, for example during welding, torch cutting, sanding and sand blasting. If these operations are likely to occur during building renovations or demolition, it is recommended that the removal of lead paint be carried out in accordance with procedures outlined in the proposed regulation.

Although the TWA and some other requirements under O. Reg. 490/09 and R.R.O. 1990 Reg. 833 do not apply to construction projects, procedures that provide the equivalent level of protection should be implemented on such projects where exposure to lead is possible.

Mercury

Mercury is commonly found in buildings, as it is contained in mercury vapour lighting, thermostats, thermometers, and electrical mercury switches. If mercury is exposed to the air, odourless vapours are formed. The regulated occupational exposure limit for airborne mercury is $0.025 \text{ mg}/\text{m}^3$ (8-hour TWA) as prescribed in (O. Reg. 490/09) and R.R.O. 1990 Reg. 833.

In Canada, the Surface Coating Materials Regulations (SOR/2005-109) under the Federal Hazardous Products Act provides a concentration of mercury that must not be exceeded in surface coatings that are presently sold in this country. This value was set at 10 ppm in 2005. However, it is important to note that there is not a direct correlation between the concentration of mercury in a material to the potential occupational exposure if the material is disturbed.

Mercury is hazardous if it is inhaled or absorbed through the skin, therefore exposure controls (including both respiratory protection and skin protection) are important to consider.



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Mercury disposal should be through a scrap dealer (elemental mercury), recycling firm for mercury vapour and returned to the manufacturer for light tubes and fixtures.

Mercury is included in O. Reg. 490/09 and applies to every employer and worker at a workplace where mercury is present, produced, processed, used, handled, or stored and at which the worker is likely to inhale, ingest, or absorb mercury (the maximum TWA for airborne mercury is 0.025 mg/ m³). Requirements related to exposure to mercury are detailed, including those relating to worker safety and the use of personal protective equipment.

Ontario's Waste Management (R.R.O. 1990, Reg. 347) under the *Environmental Protection Act* (EPA) provides directives for the disposal of hazardous materials such as mercury.

Silica

Silica, also referred to as free crystalline silica, is found in concrete, cement, mortar, ceramic wall and floor tiles, stucco finishes and acoustic ceiling tiles. Prolonged exposure to, and inhalation of free crystalline silica, may result in respiratory disease known as silicosis, which is characterized by progressive fibrosis of the inner lung tissue and marked shortness of breath or impaired lung function. The maximum TWA for airborne Silica dust is 0.05 mg/ m³ (O. Reg. 490/09 and R.R.O. 1990, Reg. 833).

Silica is included in O. Reg. 490/09 and the regulation provides information on the application of the regulation as well as allowable exposure levels, where the maximum TWA for airborne Silica dust is 0.05 mg/ m³. The assessment and control program and medical surveillance requirements are for non-construction projects as defined in O. Reg. 490/09. Refer to the document entitled *Guideline: Silica on Construction Projects*, issued by the MOL in April 2011 for safe silica work practices and personal protective equipment (PPE).

Acrylonitrile

Acrylonitrile is a clear liquid that may be colourless or yellow and that readily reacts with other chemicals to produce long, chain-like molecules (polymers). Acrylonitrile-based polymers are used to produce nitrile rubbers, plastics, acrylic fibres, coatings and adhesives. Workers are typically exposed to acrylonitrile at manufacturing facilities that produce the aforementioned products through inhaling its vapour, direct skin contact, or through ingestion. Although acrylonitrile may be present in some of the building materials, including adhesives and coatings, the chemical will likely be bonded in the polymer form. Therefore, it is not expected that an adverse exposure to acrylonitrile will occur unless the building materials are heated to extreme temperatures. Acrylonitrile vapours may become released from the acrylonitrile-based polymers during a process where high temperatures are applied.

The TWA for a worker with respect to Acrylonitrile is 2 ppm as prescribed in O. Reg. 490/09 and R.R.O. 1990 Reg. 833. The Short term Exposure Limit (STEL) for Acrylonitrile is 10 ppm for any 15-minute exposure period.



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Arsenic

The presence of arsenic in the paint coating on interior and exterior finishes is possible. As the painted surfaces will be handled as per the proposed lead regulation, it is not expected that arsenic concentrations in the air will exceed the TWA for a worker to arsenic ($10 \mu\text{g}/\text{m}^3$) as prescribed by O. Reg. 490/09 and R.R.O. 1990, Reg. 833. The STEL for arsenic is $50 \mu\text{g}/\text{m}^3$ for any 15-minute exposure period.

Benzene

Historically, benzene has been produced as a by-product of coal gasification and metallurgical coke production in steel making. The light oil product from such processes contains benzene, toluene, ethyl benzene and xylene, and these components are separated by distillation. Today, most benzene is produced from the refining of petroleum.

Benzene has applications as a solvent in synthetic rubber manufacturing and processing, and in paints, varnishes, stains, adhesives, roofing materials and sealants. The use of benzene in tire and other rubber goods manufacturing and as a solvent and component of paints and adhesives has declined considerably as a result of concerns about workplace exposure. Nevertheless, it is often present in trace quantities in petroleum and aromatic solvents, some of which have replaced benzene in many uses. Benzene is also a minor component of gasoline mixtures sold in Canada.

The TWA for a worker to benzene is 0.5 ppm as prescribed by O. Reg. 490/09 and R.R.O. 1990, Reg. 833. It is possible that benzene was present in the paints, adhesives and roofing materials used during the original construction of many buildings. However, over time, the benzene component typically volatilizes out of the paints, solvents and roofing bitumens and is released into the ambient air. Therefore, it is likely that only trace levels of benzene presently exist in these building materials. It is not expected that benzene emissions from any existing building materials on site will exceed the allowable TWA. The STEL for benzene is 2.5 ppm for any 15-minute exposure period.

Coke Oven Emissions

Coke oven emissions are found in the exhaust from the burning process of coke, and are typically not a concern in buildings. The TWA for a worker with respect to coke oven emissions is $150 \mu\text{g}/\text{m}^3$ as prescribed by O. Reg. 490/09 and R.R.O. 1990, Reg. 833.

Ethylene Oxides

Ethylene oxide is a common by product of fumigation or sterilization procedures.

The TWA for a worker with respect to ethylene oxides is 1 ppm as prescribed in O. Reg. 490/09 and R.R.O. 1990, Reg. 833. The STEL for ethylene oxides is 10 ppm for any 15-minute exposure period.



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Isocyanates

Isocyanates are a class of chemicals used in the manufacture of certain types of plastics, foams and roof insulation. The isocyanate (-CNO) group reacts very readily with certain other types of molecules, a property responsible for the usefulness of isocyanates in industry. Due to the high reactivity of the isocyanate group, exposure to isocyanates can result in primary irritation, sensitization and hypersensitivity reactions. The respiratory system, the eyes and the skin are the main areas affected by exposure. Isocyanates in their initial form are found as a vapour, a mist, or a dust which become airborne and then taken into the body. Once the isocyanates are chemically bonded to other chemicals during manufacturing processes, the isocyanates are not readily available to become airborne unless heated. Therefore, isocyanate exposure is not expected to be a concern as long as the burning of plastics, foams, and insulation is not carried out.

The TWA for a worker with respect to isocyanates, organic compounds is 5 parts per billion (ppb) as prescribed in O. Reg. 490/09 and R.R.O. 1990, Reg. 833. The STEL for isocyanates, organic compounds is 20 ppb for any 15-minute exposure period.

Vinyl Chloride

Vinyl chloride is found in many applications in building such as plumbing pipes, protective coatings on insulated pipes and interior finishes (i.e., vinyl baseboard trim). Vinyl chlorides in the above materials are bound in a solid matrix and are unlikely to become airborne such that it would exceed the maximum allowable TWA of 1 ppm, as prescribed in O. Reg. 490/09 and R.R.O. 1990, Reg. 833.

HAZARDOUS BUILDING MATERIALS

Polychlorinated Biphenyls (PCBs)

The use of PCBs in electrical equipment such as transformers and capacitors, including capacitors found in fluorescent lamp ballasts, was common up to 1980. R.R.O 1990 Regulation 362 Waste Management – PCBs (R.R.O. 1990, Reg. 362) under the EPA, prohibits the use of PCBs in electrical equipment installed after July 1, 1980.

The TWA for a worker with respect to PCBs is 0.05 mg/ m³as prescribed in R.R.O. 1990, Reg. 833.

As of September 5, 2008, under Subsection 93(1) of the *Canadian Environmental Protection Act*, (CEPA), Federal PCB regulations have been published by the Canada Gazette Part II (SOR/2008-273) that impose specific deadlines for the elimination of all PCBs in concentrations at or above 50 milligrams/kilogram (mg/kg). The regulation requires the elimination of all PCBs and PCB-containing materials currently in-use and in storage and limits the period of time PCB materials can be stored before being eliminated. Other aspects of the regulation govern the labelling and reporting of stored PCB materials and equipment as well as improved practices for the management of PCBs that remain in use (i.e., those with PCB concentrations less than 50 mg/kg) until their eventual elimination.



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Ozone-Depleting Substances

Ozone-depleting substances (ODSs) are chemical agents known as chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) used in various refrigeration equipment including air-conditioning, heat pump, refrigeration or freezer units. They have also been used in solvents, as aerosol additives in the production of foam insulation and in fire extinguishing equipment. The use of refrigerants (including those that are ODSs or contain ODSs) is regulated by Ontario Regulation 463/10, *Ozone Depleting Substances and Other Halocarbons* (O. Reg. 463/10), under the EPA. The regulation imposes restrictions on the purchasing of refrigerants and on the servicing, dismantling, disposing of or decommissioning of equipment containing refrigerants or halon fire extinguishing agents.

On federal land, aboriginal land and federal works, buildings and undertakings, *Federal Halocarbon Regulation 2003* (SOR/2003-289) applies. All other buildings and uses of refrigerants and other agents are under the *Ozone-Depleting Substances Regulations 1998* (SOR/99-7), under CEPA. The regulations prohibit the release of halocarbons contained in refrigeration systems, air conditioning systems, fire extinguishers (except to fight a fire that is not a fire caused for training purposes) or containers or equipment used in the re-use, recycling, reclamation or storage of a halocarbon.

The regulations also imposes restrictions on the servicing and dismantling, disposing of or decommissioning of any system containing halocarbons and requires the recovery of halocarbons into an appropriate container by a certified individual. The regulation also details an owner's record-keeping obligations.

Mould

Mould can be found everywhere in the outside environment, on plants, in soil and on dead and decaying matter (i.e., dead leaves). Mould requires two main conditions in order to grow - a source of food (a substrate typically comprised of cellulose) and water. Sources of food for mould are plentiful in outdoor and indoor environments; however it is the presence of water in an indoor environment that will determine mould growth. The source of water can be a result of a water pipe leak or even excess condensation. Thus, the key to controlling mould indoors is to control the presence of water.

At present, there are no specific laws or regulations governing acceptable levels of mould in buildings. The lack of specific regulatory standards is due in part to an inability to establish exposure-response relationships. Variation in individual susceptibility, limitations in sampling and analytical techniques, and the vast number of fungal agents and their products make it difficult to establish safe levels of exposure for all individuals. With a lack of defined exposure criteria, current Health Canada and other agency guidelines on the assessment and control of mould contamination in public buildings are largely based on prudent avoidance (i.e., remove any indoor growth or amplification site of mould, regardless of the concentration of moulds or their products in the indoor environment).



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Although there are currently no regulations in Canada pertaining specifically to mould in buildings, based on an Ontario MOL alert, employers are required by Section 25(2)(h) of the Occupational Health and Safety Act to take every precaution reasonable in the circumstances for the protection of workers.

The OHSA places a responsibility on constructors (Section 23), employers (Section 25), and supervisors (Section 27) to ensure the health and safety of workers. This includes protecting workers from mould in workplace buildings. Various sections of the Industrial, Construction, Mining or Health Care regulations may also apply to maintenance and remediation activities.

The Ontario MOL has published an Alert (MOL, 2000) indicating that sustained and/or extensive growth of visible mould on interior surfaces of a building is unacceptable and stating that mould growth on the interior surfaces of buildings is a risk factor for health problems.

Several guidelines and other resources describe procedures for the investigation and remediation of mould. The following documents indicate that mould observed in occupied building should be remediated in accordance with these procedures:

- Environmental Abatement Council of Ontario's (EACO) Mould Abatement Guidelines, 2015 – Edition 3;
- Mould Guidelines for The Canadian Construction Industry, Canadian Construction Association – 82, 2004;
- Guidelines on Assessment and Remediation of Fungi in Indoor Environment, New York City Department of Health and Mental Hygiene, November 2008
- *Bioaerosols: Assessment and Control*, American Conference of Governmental Industrial Hygienists (ACGIH), 1999
- Fungal Contamination in Public Buildings: Health Effects and Investigation Methods, Federal-Provincial Committee on Environmental and Occupational Health, 2004
- Field Guide for the Determination of Biological Contaminants in Environmental Samples, American Industrial Hygiene Association (AIHA), 1996
- *Clean-Up Procedures for Mould in Houses*, Canada Mortgage and Housing Corporation (CMHC), 2004
- *Standard and Reference Guide for Professional Water Damage Restoration – IICRC S500*, Institute of Inspection, Cleaning and Restoration Certification, 2015
- *Reference Guide for Professional Mould Remediation – IICRC S520*, Institute of Inspection, Cleaning and Restoration Certification, 2015

Urea Formaldehyde Foam Insulation

Urea-formaldehyde foam insulation (UFFI) was developed in Europe in the 1950s as an improved means of insulating difficult-to-reach cavities in building walls. It is typically made at a construction site from a mixture of urea-formaldehyde resin, a foaming agent and compressed air. When the mixture is injected into the wall, urea and formaldehyde unite and "cure" into an insulating foam plastic.



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During the 1970s, when concerns about energy efficiency led to efforts to improve home insulation in Canada, UFFI became an important insulation product for existing houses. Most installations occurred between 1977 and its ban in Canada in 1980.

In the insulating process, a slight excess of formaldehyde was often added to ensure complete "curing" with the urea to produce the urea-formaldehyde foam. Formaldehyde is a pungent, colourless gas commonly used in water solution as a preservative and disinfectant. It is also a basis for major plastics, including durable adhesives. It occurs naturally in the human body and in the outdoor environment. Formaldehyde is used to bond plywood, particleboard, carpets and fabrics. Formaldehyde is also a by-product of combustion; it is found in tobacco smoke, vehicle exhaust and the fumes from furnaces, fireplaces and wood stoves.

While small amounts of formaldehyde are harmless, it is an irritating and toxic gas in significant concentrations. Symptoms of overexposure to formaldehyde include irritation to eyes, nose and throat; persistent cough and respiratory distress; skin irritation; nausea; headache; and dizziness.

Health Canada has determined that 0.1 parts per million (ppm) is a safe level of formaldehyde in the home. Sensitivity to this level may vary based on individual age and health.

Tests show that UFFI is not a source of over-exposure to formaldehyde after the initial curing and release of excess gas. As it was last installed in 1980, it would certainly not be causing excess indoor formaldehyde today. Buildings with UFFI show no higher formaldehyde levels than those without it. However, if UFFI comes in contact with water or moisture, it could begin to break down. Wet or deteriorating UFFI should be removed by a specialist and the source of the moisture problem should be repaired.

There are currently no regulations in Canada pertaining specifically to UFFI in buildings. However, the Occupational Health and Safety Act places a responsibility on constructors (Section 23), employers (Section 25), and supervisors (Section 27) to ensure the health and safety of workers.



APPENDIX B

SITE PHOTOGRAPHS



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Photo 1: Exterior view of the House.



Photo 2: House – Asbestos-containing vermiculite insulation located in the attic.



Photo 3: House – Asbestos-containing vinyl floor tiles – beige found beneath carpet in bedrooms 1-3, hallway and living room.



Photo 4: House – Asbestos-containing exterior window glazing compound – back on the exterior laundry room and kitchen windows.



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Photo 5: House – Damaged lead-containing white coloured paint on exterior wood finishes.



Photo 6: House – Lead-containing white coloured paint on interior wood finishes.



Photo 7: House – Lead-containing brown coloured paint on interior closet door frame.

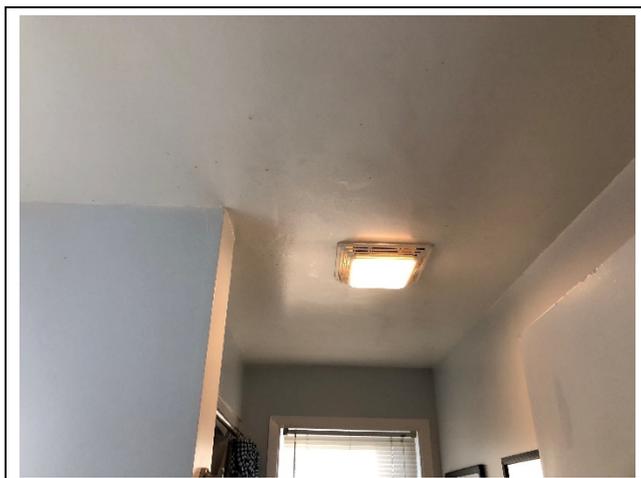


Photo 8: House – Water damaged drywall ceiling within washroom 2 of the addition.



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Photo 9: House – Lennox HVAC unit containing R-22 ozone depleting substances on exterior.



Photo 10: House – Fluorescent light tubes containing mercury vapour in kitchen.

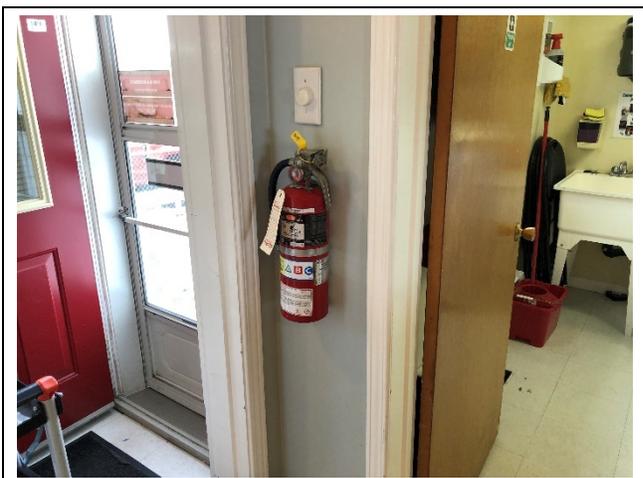


Photo 11: House – Fire extinguisher on wall within kitchen.



Photo 12: Exterior view of the Office Building.



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Photo 13: Office Building – Asbestos-containing exterior window glazing – black on exterior windows.



Photo 14: Office Building – Damaged lead-containing white coloured paint on wood siding in the locker room.



Photo 15: Office Building – Water damaged fiberglass wall insulation in the locker room area.



Photo 16: Office Building – Water stained ceiling tiles on office 1 ceiling.



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Photo 17: Office Building – Fluorescent light tubes containing mercury vapour in office 1.

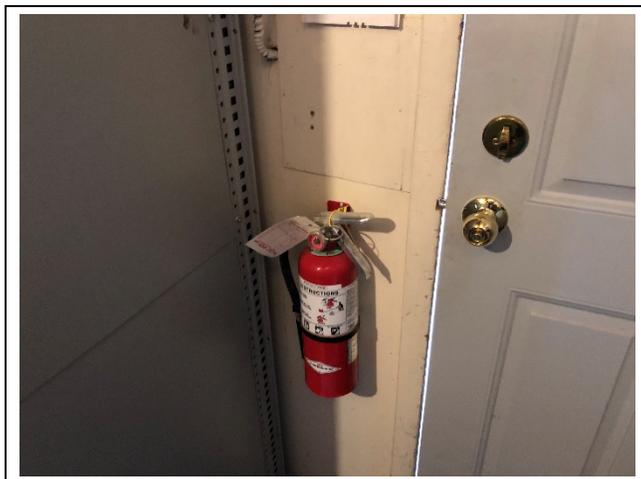


Photo 18: Office Building – Fire extinguisher on wall within locker room.

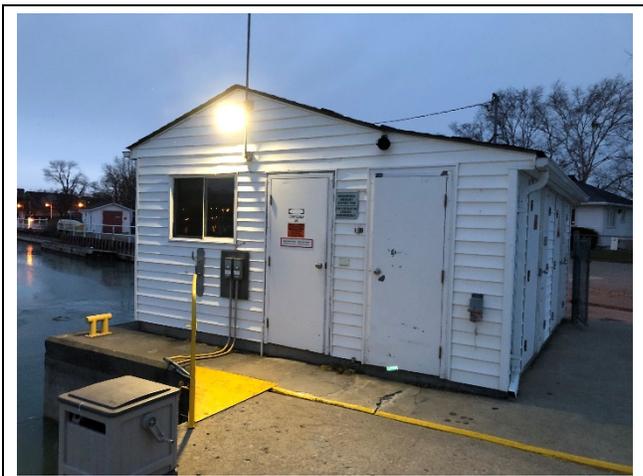


Photo 19: Exterior view of the Pier Building (workshop).



Photo 20: Pier Building – Damaged lead-containing white coloured paint on exterior doors.



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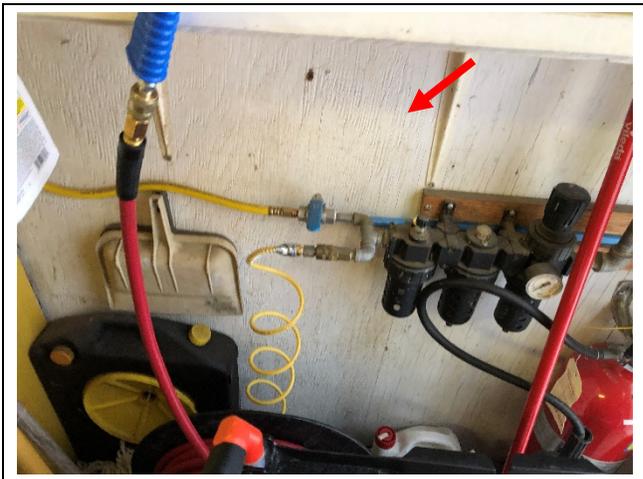


Photo 21: Pier Building – Lead-containing white coloured paint on interior wood board walls.

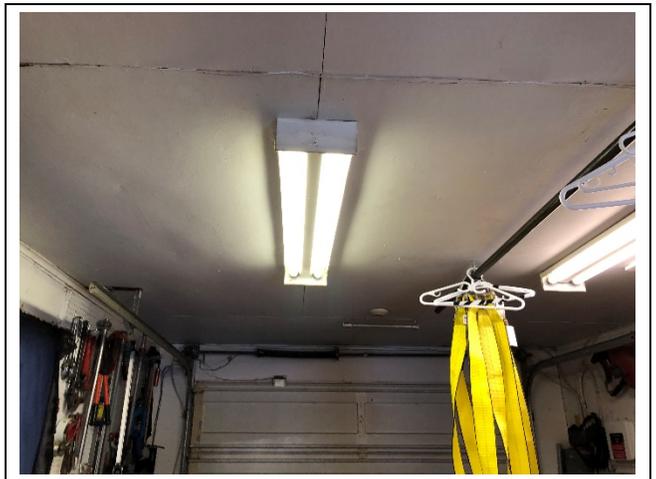


Photo 22: Pier Building – Fluorescent light tubes containing mercury vapour.

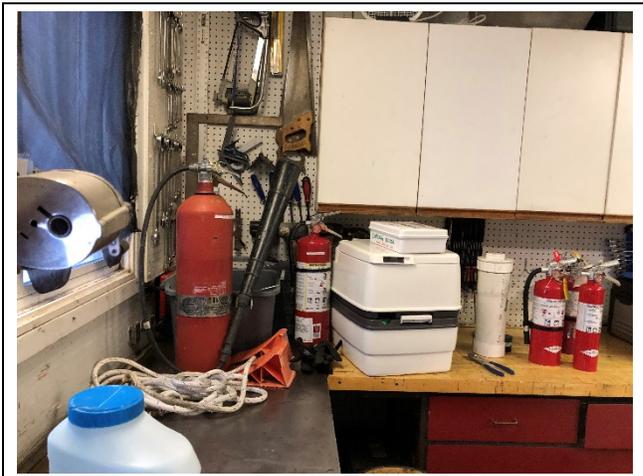


Photo 23: Pier Building – Fire extinguishers stored within workshop.



Photo 24: Pier Building – Chemical cabinet containing motor oils, paints, insecticides, spray cans and lubricants within workshop.



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Photo 25: Exterior view of the Garden Shed.



Photo 26: Garden Shed – Four unlabelled drums on exterior of shed.

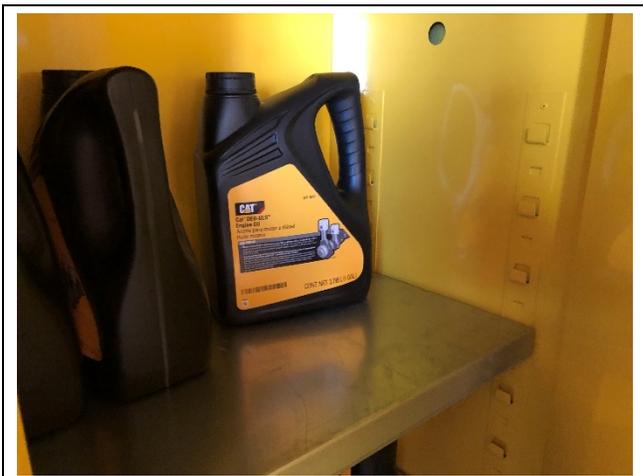


Photo 27: Garden Shed – Chemical cabinet containing motor oils, antifreeze, gasoline and diesel.



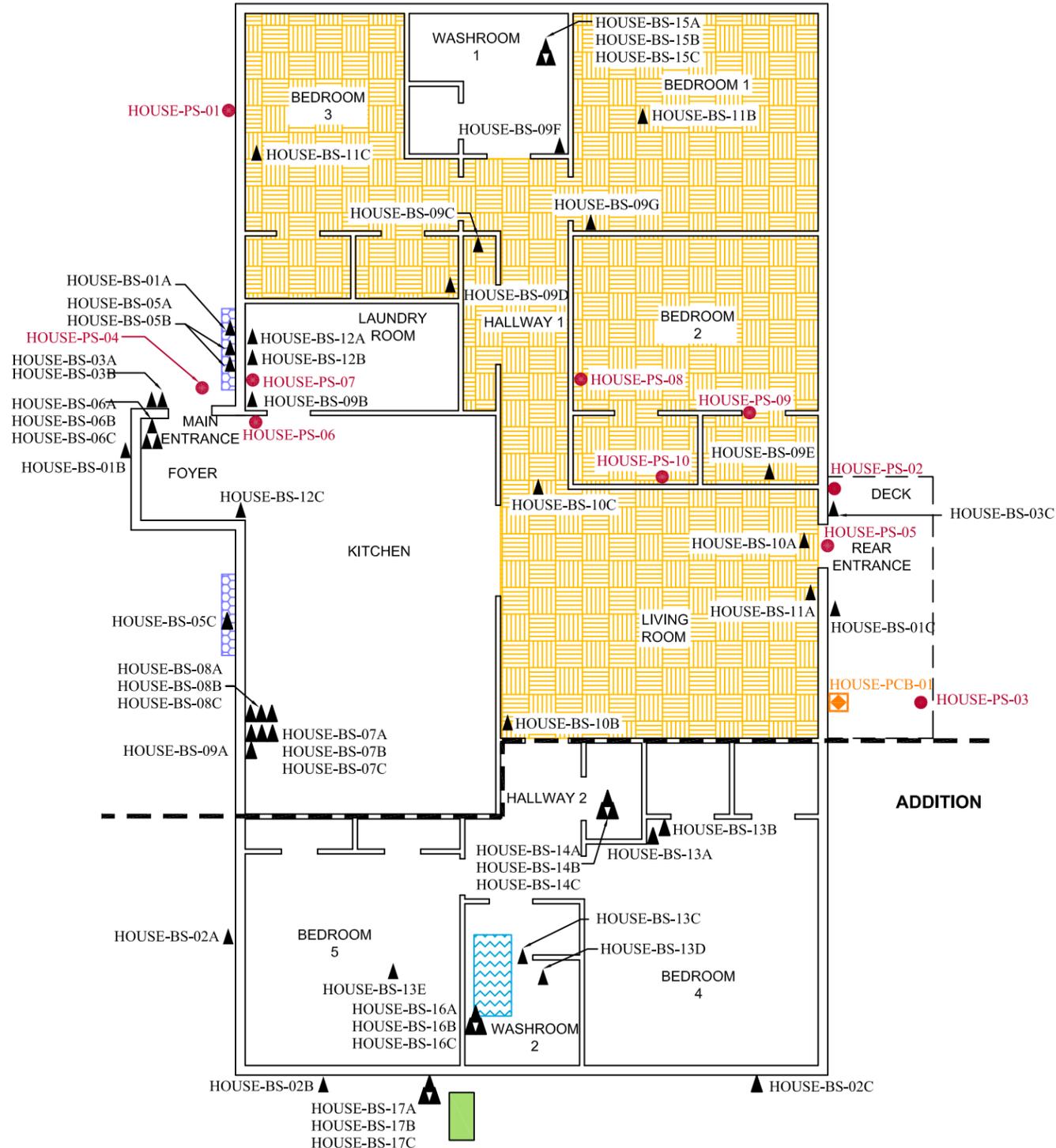
Photo 28: Garden Shed – Chemical cabinet containing liquified petroleum gas.



APPENDIX C FLOOR PLANS



NOTE: ASBESTOS-CONTAINING VERMICULITE IS PRESENT IN THE ATTIC.

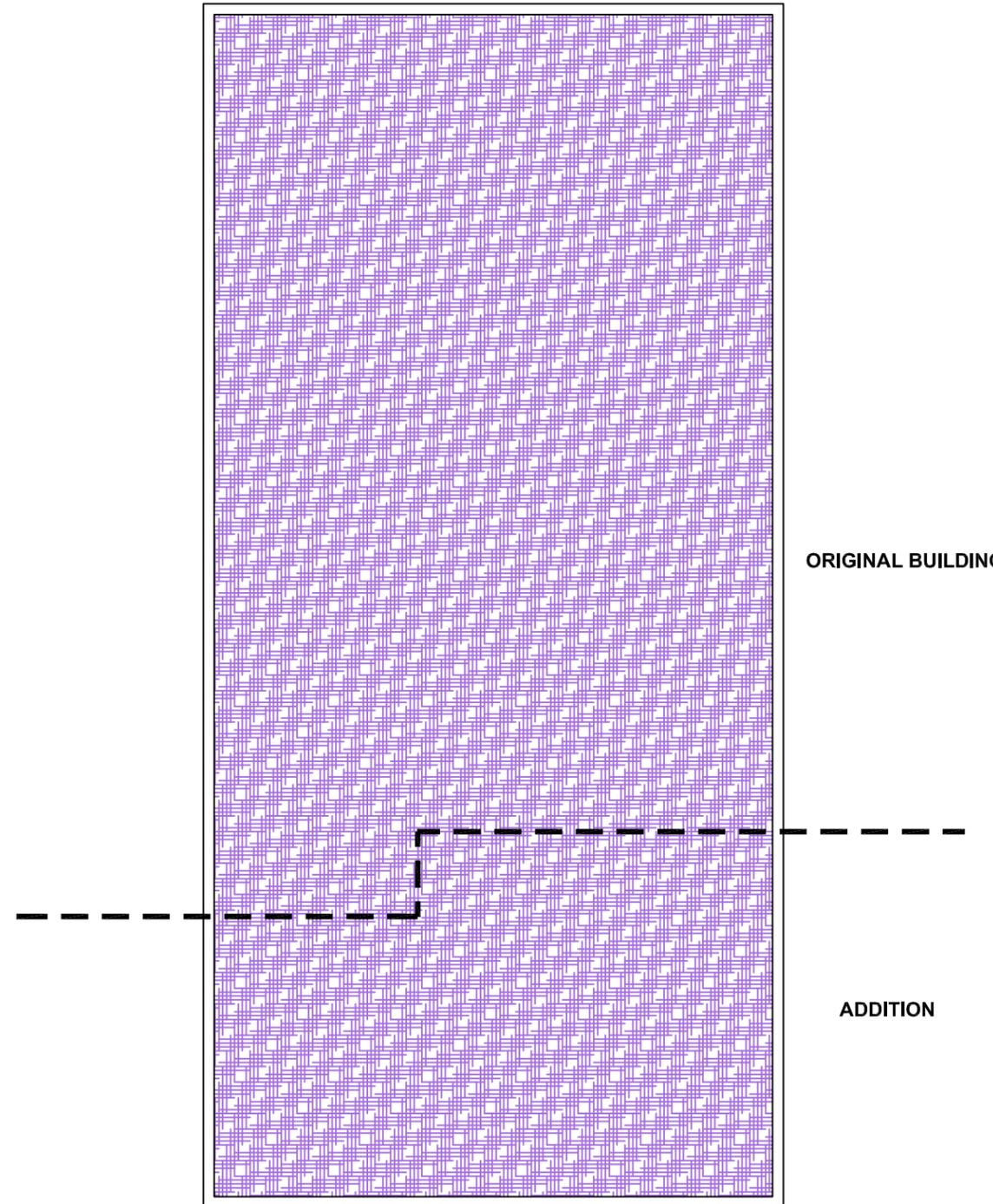


- LEGEND**
- ▲ BULK SAMPLE
 - PAINT CHIP SAMPLE
 - ◆ PCB SAMPLE
 - ▨ ASBESTOS-CONTAINING VINYL FLOOR TILES
 - ▨ ASBESTOS-CONTAINING GLAZING COMPOUND
 - EQUIPMENT CONTAINING OZONE DEPLETING SUBSTANCES
 - ▨ EVIDENCE OF WATER STAINING/DAMAGE

FIRST FLOOR - HOUSE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

Reference:	Project No.:	122150932	Client:	PUBLIC WORKS AND GOVERNMENT SERVICES CANADA	FLOOR PLAN	Dwg. No.:	1	Stantec
	Scale:	N.T.S.						
	Date:	20/01/15	Site Address					
	Dwn. By:	CD SL2020010176 DM/CS						
	App'd By:	MM						
			SEARCH AND RESCUE STATION 114 DIVISION STREET SOUTH COBOURG, ONTARIO					



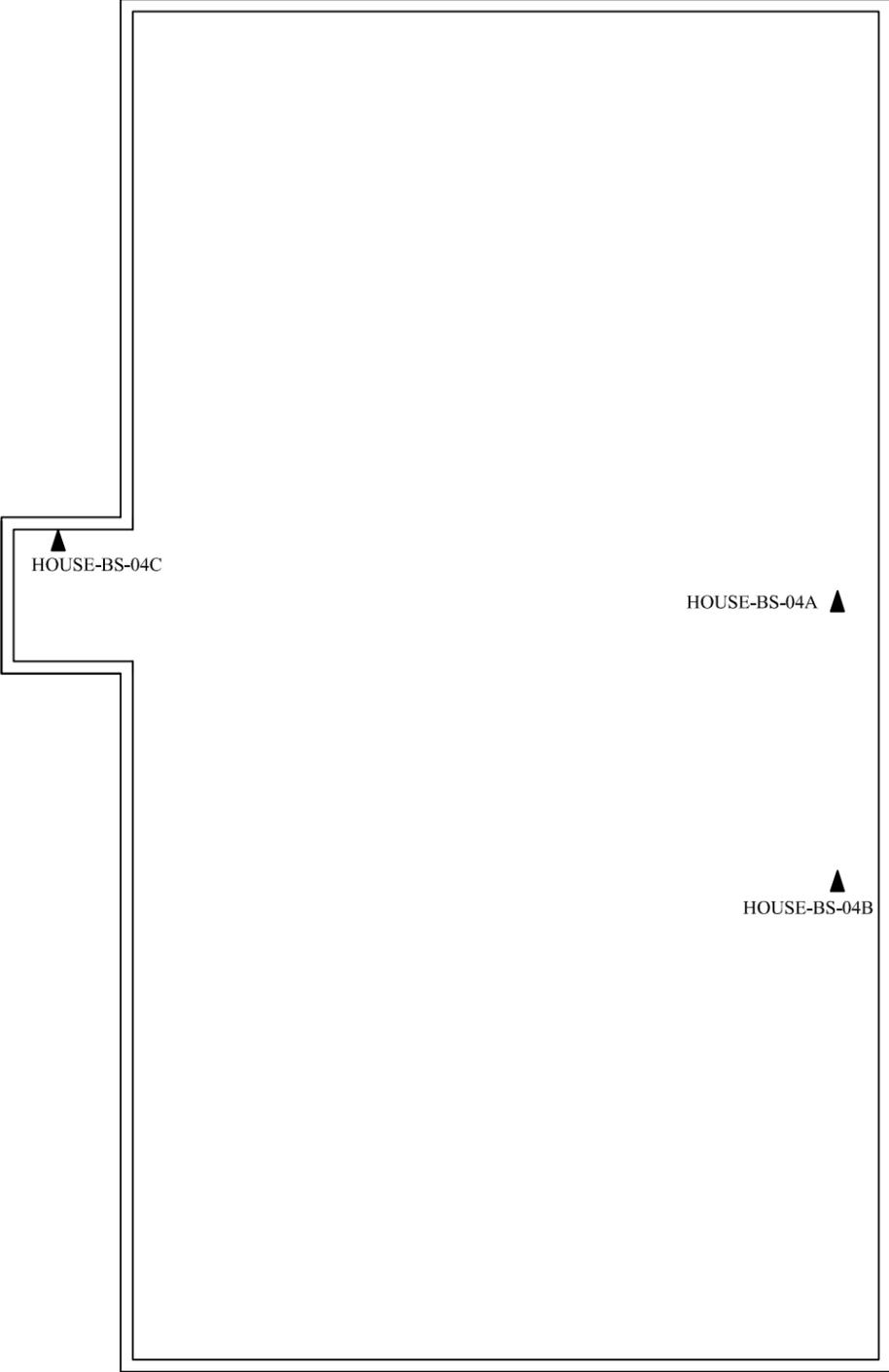
ATTIC - HOUSE

LEGEND

 ASBESTOS-CONTAINING
VERMICULITE INSULATION

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

Reference:	Project No.: 122150932	Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA	FLOOR PLAN	Dwg. No.: 2	
	Scale: N.T.S.				
	Date: 20/01/15	Site Address SEARCH AND RESCUE STATION 114 DIVISION STREET SOUTH COBOURG, ONTARIO			
	Dwn. By: CD <small>SL2020010177</small> DM/CS				
App'd By: MM					



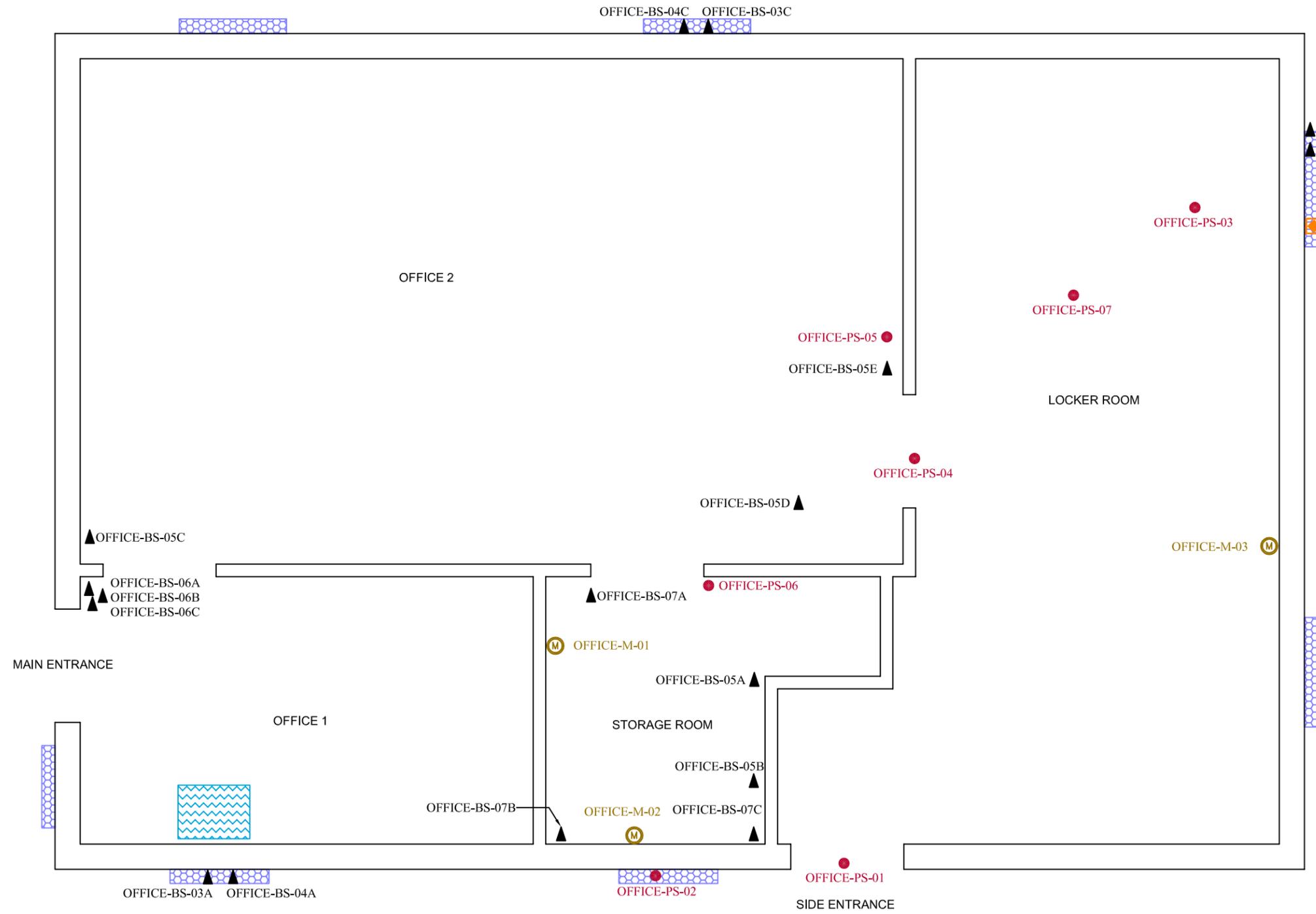
ROOF - HOUSE

LEGEND

▲ BULK SAMPLE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

Reference:	Project No.: 122150932	Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA	FLOOR PLAN	Dwg. No.: 3	
	Scale: N.T.S.				
	Date: 20/01/15	Site Address SEARCH AND RESCUE STATION 114 DIVISION STREET SOUTH COBOURG, ONTARIO			
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App'd By: MM					

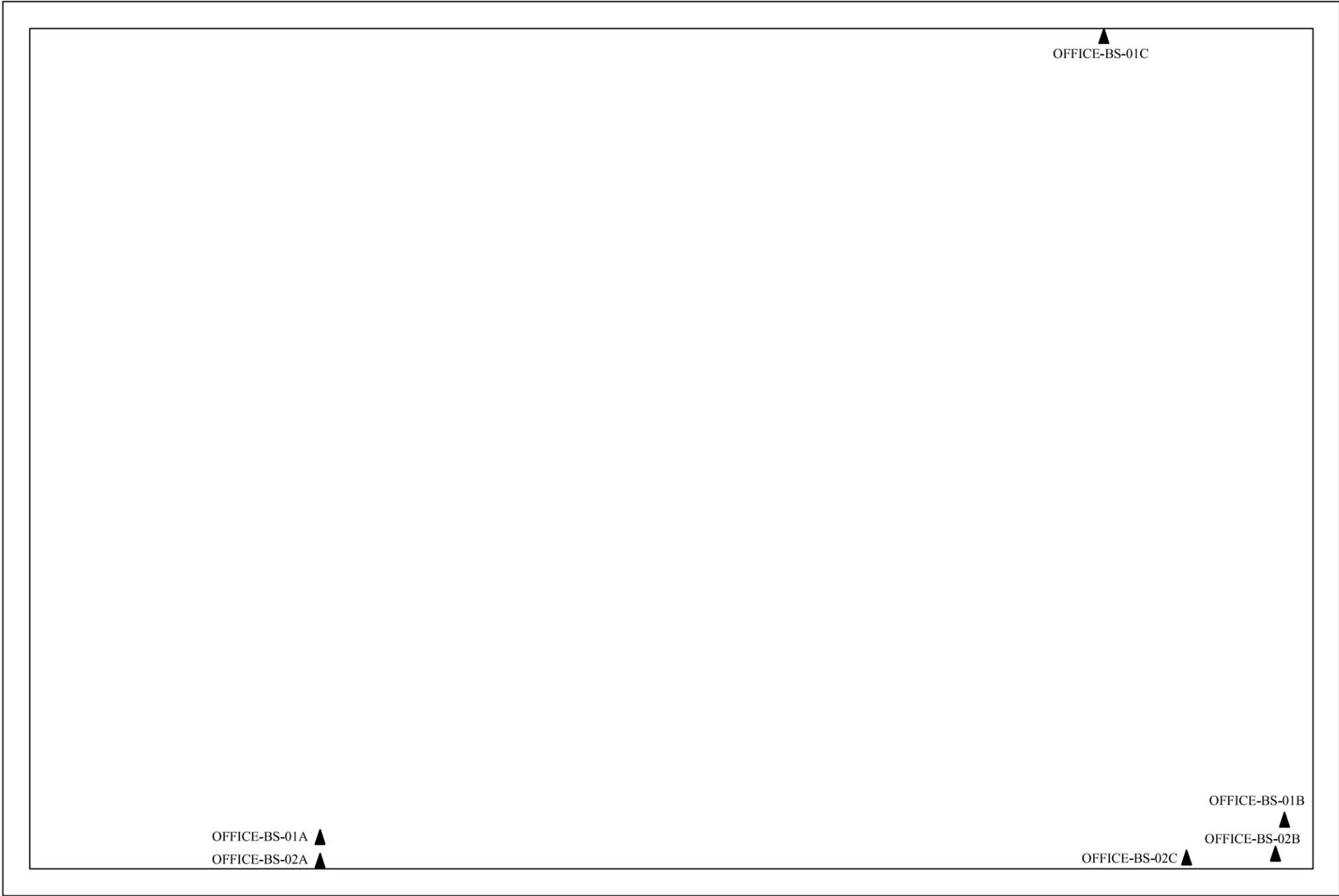


- LEGEND**
- ▲ BULK SAMPLE
 - PAINT CHIP SAMPLE
 - ◻ PCB SAMPLE
 - Ⓜ MOULD SAMPLE
 - ▨ ASBESTOS-CONTAINING GLAZING COMPOUND
 - ▨ EVIDENCE OF WATER STAINING/DAMAGE

FIRST FLOOR - OFFICE BUILDING

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

Reference:	Project No.:	122150932	Client:	PUBLIC WORKS AND GOVERNMENT SERVICES CANADA	FLOOR PLAN	Dwg. No.:	4	Stantec
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	Date:	20/01/15	Site Address	SEARCH AND RESCUE STATION 114 DIVISION STREET SOUTH COBOURG, ONTARIO				
	Dwn. By:	CD <small>SL2020010179</small> DM/CS						
App'd By:	MM							



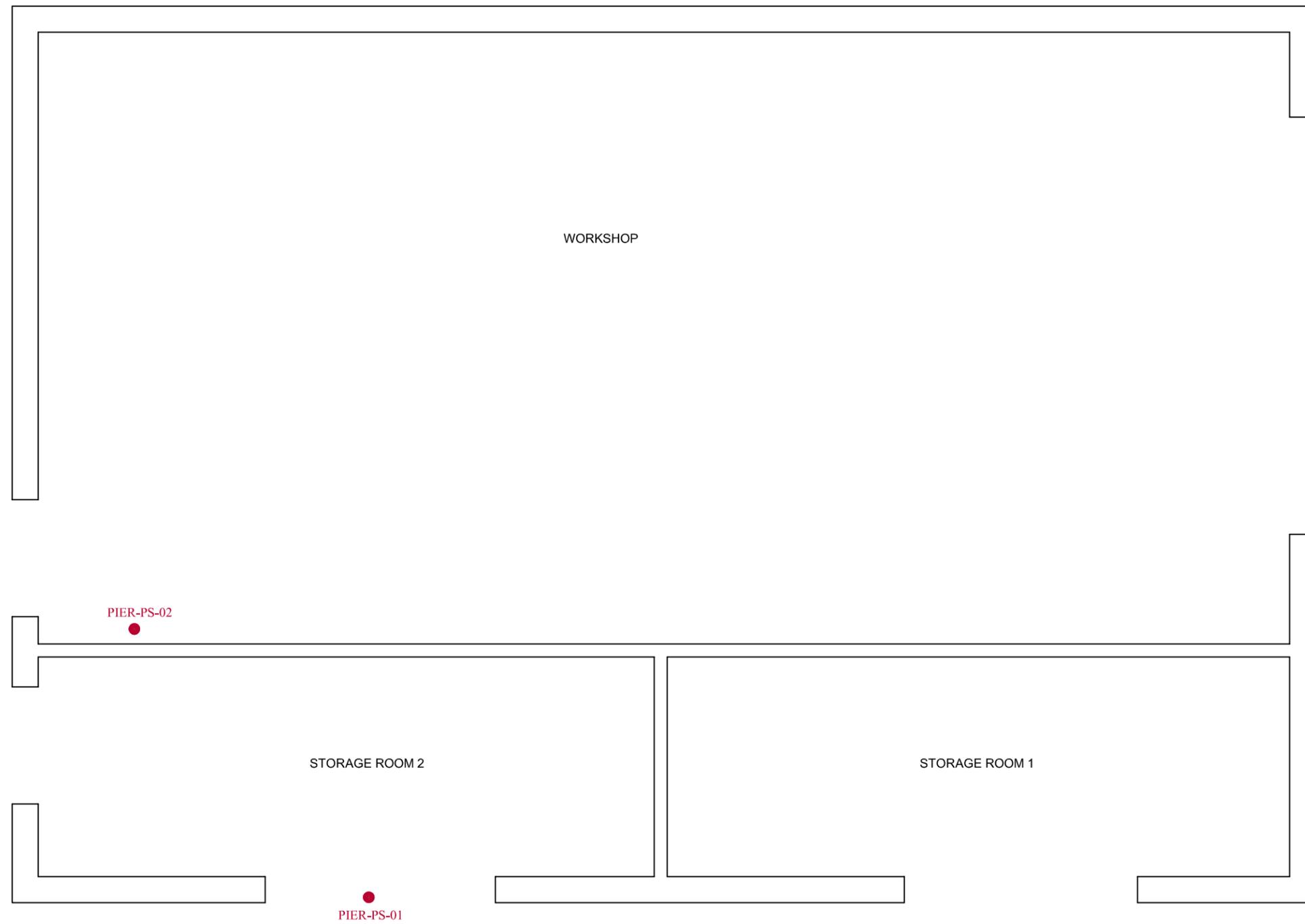
ROOF - OFFICE BUILDING

LEGEND

▲ BULK SAMPLE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

Reference:	Project No.: 122150932	Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA	FLOOR PLAN	Dwg. No.: 5	
	Scale: N.T.S.				
	Date: 20/01/15	Site Address SEARCH AND RESCUE STATION 114 DIVISION STREET SOUTH COBOURG, ONTARIO			
	Dwn. By: CD <small>SL2020010180 DM/CS</small>				
App'd By: MM					



FIRST FLOOR - PIER BUILDING

LEGEND

● PAINT CHIP SAMPLE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

Reference:	Project No.: 122150932	Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA	FLOOR PLAN	Dwg. No.:	Stantec
	Scale: N.T.S.			Site Address SEARCH AND RESCUE STATION 114 DIVISION STREET SOUTH COBOURG, ONTARIO	
	Date: 20/01/15				
	Dwn. By: CD <small>SL2020010181 DM/CS</small>				
App'd By: MM					



PIER-BS-01A ▲ ▲ PIER-BS-02A

PIER-BS-01B ▲ ▲ PIER-BS-02B

PIER-BS-01C ▲ ▲ PIER-BS-02C

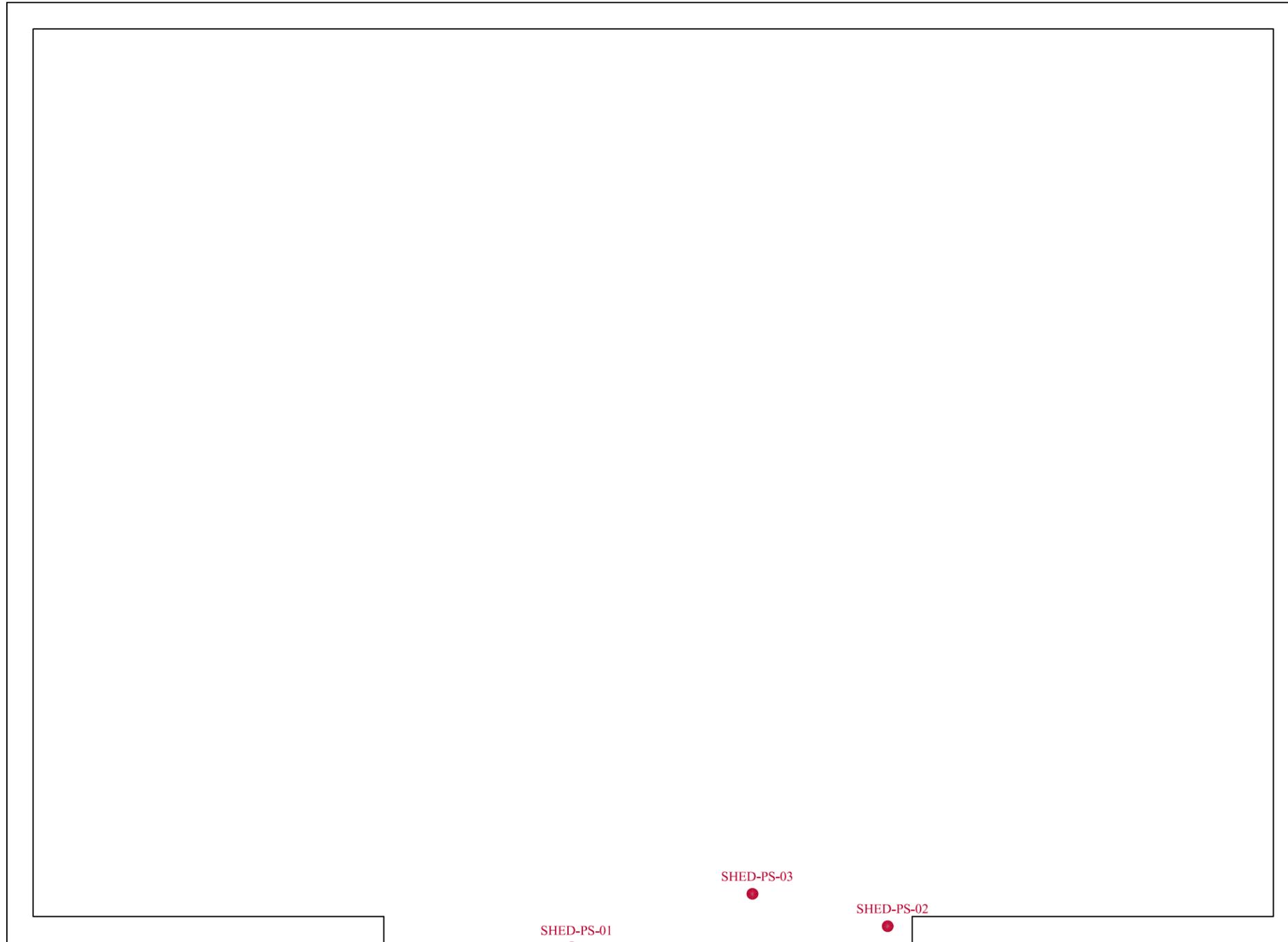
ROOF - PIER BUILDING

LEGEND

▲ BULK SAMPLE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

Reference:	Project No.:	122150932	Client:	FLOOR PLAN	Dwg. No.:	7		
	Scale:	N.T.S.						PUBLIC WORKS AND GOVERNMENT SERVICES CANADA
	Date:	20/01/15	Site Address					SEARCH AND RESCUE STATION 114 DIVISION STREET SOUTH COBOURG, ONTARIO
	Dwn. By:	CD <small>SL2020010182</small> DM/CS						
App'd By:	MM							



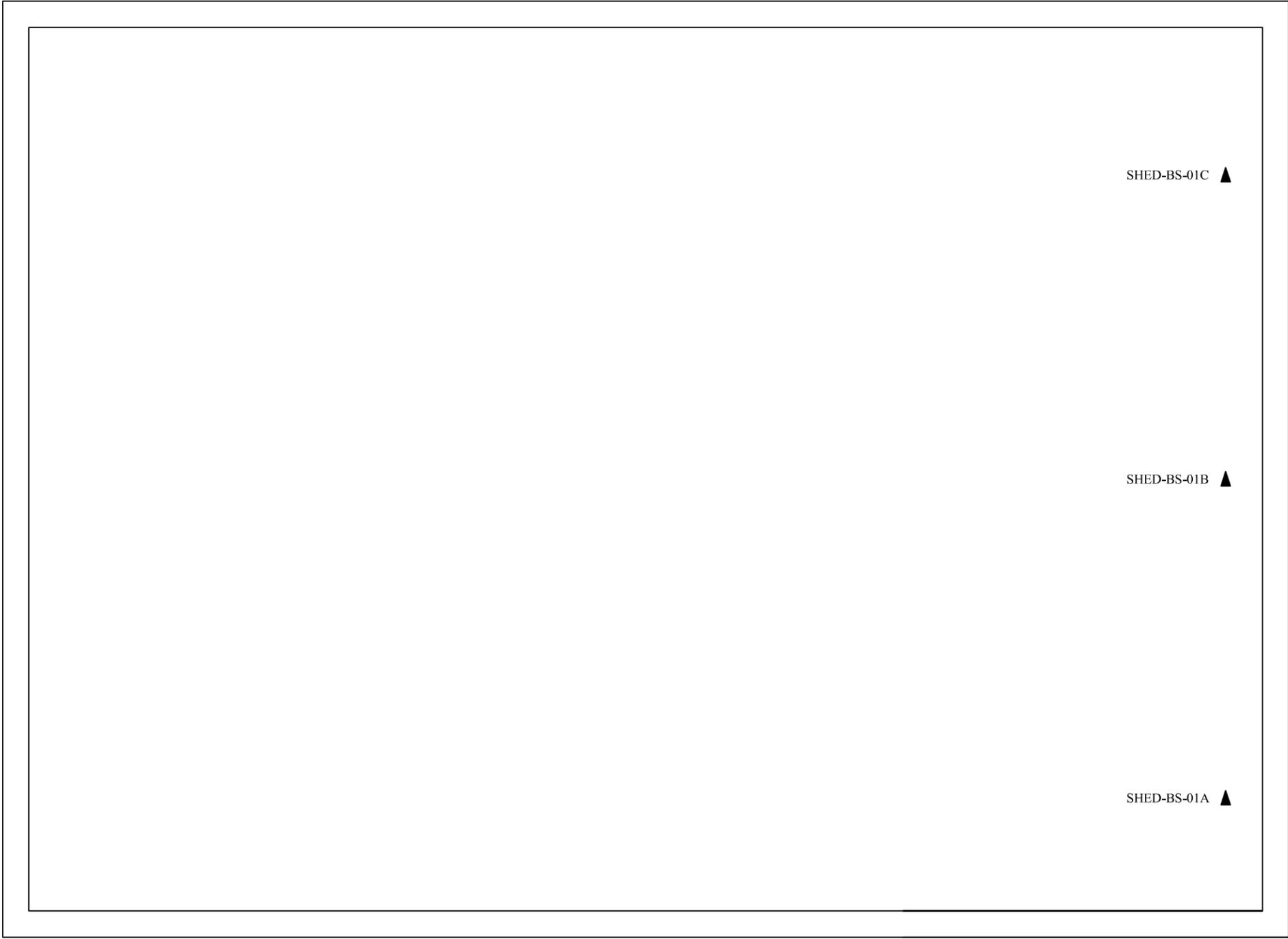
FIRST FLOOR - GARDEN SHED

LEGEND

● PAINT CHIP SAMPLE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

Reference:	Project No.: 122150932	Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA	FLOOR PLAN	Dwg. No.: 8	
	Scale: N.T.S.				
	Date: 20/01/15	Site Address SEARCH AND RESCUE STATION 114 DIVISION STREET SOUTH COBOURG, ONTARIO			
	Dwn. By: CD <small>SL202010183 DM/CS</small>				
App'd By: MM					



SHED-BS-01C ▲

SHED-BS-01B ▲

SHED-BS-01A ▲

ROOF - GARDEN SHED

LEGEND

▲ BULK SAMPLE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

Reference:	Project No.: 122150932	Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA	FLOOR PLAN	Dwg. No.:	
	Scale: N.T.S.			Site Address SEARCH AND RESCUE STATION 114 DIVISION STREET SOUTH COBOURG, ONTARIO	
	Date: 20/01/15				
	Dwn. By: CD <small>SL2020010184</small> DM/CS				
App'd By: MM					

APPENDIX D SUMMARY OF RESULTS OF ANALYSIS OF BULK SAMPLES FOR ASBESTOS



Summary of Bulk Sample Analysis for Asbestos Type and Content

Sample Number	Sampling Location	Description of Sampled Material	Asbestos Type and Content
HOUSE-BS-01A	House - exterior, original building, window	exterior window caulking - white	None Detected
HOUSE-BS-01B	House - exterior, original building, window	exterior window caulking - white	None Detected
HOUSE-BS-01C	House - exterior, original building, window	exterior window caulking - white	None Detected
HOUSE-BS-02A	House - exterior, addition, window	exterior window caulking - white	None Detected
HOUSE-BS-02B	House - exterior, addition, window	exterior window caulking - white	None Detected
HOUSE-BS-02C	House - exterior, addition, window	exterior window caulking - white	None Detected
HOUSE-BS-03A	House - exterior, original building, main entrance, door	exterior door caulking - white	None Detected
HOUSE-BS-03B	House - exterior, original building, main entrance, door	exterior door caulking - white	None Detected
HOUSE-BS-03C	House - exterior, original building, rear entrance, door	exterior door caulking - white	None Detected
HOUSE-BS-04A-TAR	House - exterior, roof	roofing material	None Detected
HOUSE-BS-04A-TAR FELT	House - exterior, roof	roofing material	None Detected
HOUSE-BS-04B	House - exterior, roof	roofing material	None Detected
HOUSE-BS-04C	House - exterior, roof	roofing material	None Detected
HOUSE-BS-05A	House - exterior, original building, laundry room, window	exterior window glazing compound - black	0.83% chrysotile
HOUSE-BS-05B	House - exterior, original building, laundry room, window	exterior window glazing compound - black	Positive Stop (Not Analyzed)
HOUSE-BS-05C	House - exterior, original building, kitchen, window	exterior window glazing compound - black	Positive Stop (Not Analyzed)
HOUSE-BS-06A	House - original building, foyer, ceiling	1'x1' acoustic ceiling tiles - white with random pindots	None Detected
HOUSE-BS-06B	House - original building, foyer, ceiling	1'x1' acoustic ceiling tiles - white with random pindots	None Detected

Summary of Bulk Sample Analysis for Asbestos Type and Content

Sample Number	Sampling Location	Description of Sampled Material	Asbestos Type and Content
HOUSE-BS-06C	House - original building, foyer, ceiling	1'x1' acoustic ceiling tiles - white with random pindots	None Detected
HOUSE-BS-07A	House - original building, kitchen, backsplash	grout associated with 4"x4" ceramic wall tile - grey	None Detected
HOUSE-BS-07B	House - original building, kitchen, backsplash	grout associated with 4"x4" ceramic wall tile - grey	None Detected
HOUSE-BS-07C	House - original building, kitchen, backsplash	grout associated with 4"x4" ceramic wall tile - grey	None Detected
HOUSE-BS-08A	House - original building, kitchen, backsplash	adhesive associated with 4"x4" ceramic wall tile - grey	None Detected
HOUSE-BS-08B	House - original building, kitchen, backsplash	adhesive associated with 4"x4" ceramic wall tile - grey	None Detected
HOUSE-BS-08C	House - original building, kitchen, backsplash	adhesive associated with 4"x4" ceramic wall tile - grey	None Detected
HOUSE-BS-09A-ROUGH COAT	House - original building, kitchen, wall	plaster	None Detected
HOUSE-BS-09A-SKIM COAT	House - original building, kitchen, wall	plaster	None Detected
HOUSE-BS-09B-ROUGH COAT	House - original building, laundry room, wall	plaster	None Detected
HOUSE-BS-09B-SKIM COAT	House - original building, laundry room, wall	plaster	None Detected
HOUSE-BS-09C-ROUGH COAT	House - original building, hallway 1, wall	plaster	None Detected
HOUSE-BS-09C-SKIM COAT	House - original building, hallway 1, wall	plaster	None Detected
HOUSE-BS-09D-ROUGH COAT	House - original building, bedroom 3, closet, ceiling	plaster	None Detected
HOUSE-BS-09D-SKIM COAT	House - original building, bedroom 3, closet, ceiling	plaster	None Detected
HOUSE-BS-09E-ROUGH COAT	House - original building, bedroom 2, closet, ceiling	plaster	None Detected
HOUSE-BS-09E-SKIM COAT	House - original building, bedroom 2, closet, ceiling	plaster	None Detected

Summary of Bulk Sample Analysis for Asbestos Type and Content

Sample Number	Sampling Location	Description of Sampled Material	Asbestos Type and Content
HOUSE-BS-09F-ROUGH COAT	House - original building, washroom 1, ceiling	plaster	None Detected
HOUSE-BS-09F-SKIM COAT	House - original building, washroom 1, ceiling	plaster	None Detected
HOUSE-BS-09G-ROUGH COAT	House - original building, bedroom 1, wall	plaster	None Detected
HOUSE-BS-09G-SKIM COAT	House - original building, bedroom 1, wall	plaster	None Detected
HOUSE-BS-10A	House - original building, living room, ceiling	texture coat	None Detected
HOUSE-BS-10B	House - original building, living room, ceiling	texture coat	None Detected
HOUSE-BS-10C	House - original building, living room, ceiling	texture coat	None Detected
HOUSE-BS-11A	House - original building, living room, floor	vinyl floor tile - beige	2.0% chrysotile
HOUSE-BS-11A-MASTIC	House - original building, living room, floor	mastic associated with vinyl floor tile - beige	None Detected
HOUSE-BS-11B	House - original building, bedroom 1, floor	vinyl floor tile - beige	Positive Stop (Not Analyzed)
HOUSE-BS-11B-MASTIC	House - original building, bedroom 1, floor	mastic associated with vinyl floor tile - beige	None Detected
HOUSE-BS-11C	House - original building, bedroom 3, floor	vinyl floor tile - beige	Positive Stop (Not Analyzed)
HOUSE-BS-11C-MASTIC	House - original building, bedroom 3, floor	mastic associated with vinyl floor tile - beige	None Detected
HOUSE-BS-12A	House - original building, laundry room, floor	12"x12" vinyl floor tiles - white with grey flecks	None Detected
HOUSE-BS-12A-MASTIC	House - original building, laundry room, floor	mastic associated with 12"x12" vinyl floor tiles - white with grey flecks	None Detected
HOUSE-BS-12B	House - original building, laundry room, floor	12"x12" vinyl floor tiles - white with grey flecks	None Detected
HOUSE-BS-12B-MASTIC	House - original building, laundry room, floor	mastic associated with 12"x12" vinyl floor tiles - white with grey flecks	None Detected

Summary of Bulk Sample Analysis for Asbestos Type and Content

Sample Number	Sampling Location	Description of Sampled Material	Asbestos Type and Content
HOUSE-BS-12C	House - original building, kitchen, floor	12"x12" vinyl floor tiles - white with grey flecks	None Detected
HOUSE-BS-12C-MASTIC	House - original building, kitchen, floor	mastic associated with 12"x12" vinyl floor tiles - white with grey flecks	None Detected
HOUSE-BS-13A	House - addition, bedroom 4, wall	drywall joint-fill compound	None Detected
HOUSE-BS-13B	House - addition, bedroom 4, ceiling	drywall joint-fill compound	None Detected
HOUSE-BS-13C	House - addition, washroom 2, wall	drywall joint-fill compound	None Detected
HOUSE-BS-13D	House - addition, washroom 2, wall	drywall joint-fill compound	None Detected
HOUSE-BS-13E	House - addition, bedroom 5, ceiling	drywall joint-fill compound	None Detected
HOUSE-BS-14A	House - addition, hallway 2, closet, floor	carpet mastic - yellow	None Detected
HOUSE-BS-14B	House - addition, hallway 2, closet, floor	carpet mastic - yellow	None Detected
HOUSE-BS-14C	House - addition, hallway 2, closet, floor	carpet mastic - yellow	None Detected
HOUSE-BS-15A	House - original building, washroom 1, floor	vinyl sheet flooring - beige with tile pattern	None Detected
HOUSE-BS-15B	House - original building, washroom 1, floor	vinyl sheet flooring - beige with tile pattern	None Detected
HOUSE-BS-15C	House - original building, washroom 1, floor	vinyl sheet flooring - beige with tile pattern	None Detected
HOUSE-BS-16A	House - addition, washroom 2, floor	vinyl sheet flooring - grey	None Detected
HOUSE-BS-16B	House - addition, washroom 2, floor	vinyl sheet flooring - grey	None Detected
HOUSE-BS-16C	House - addition, washroom 2, floor	vinyl sheet flooring - grey	None Detected
HOUSE-BS-17A	House - exterior, around electrical conduit	fire stop caulking - white	None Detected
HOUSE-BS-17B	House - exterior, around electrical conduit	fire stop caulking - white	None Detected

Summary of Bulk Sample Analysis for Asbestos Type and Content

Sample Number	Sampling Location	Description of Sampled Material	Asbestos Type and Content
HOUSE-BS-17C	House - exterior, around electrical conduit	fire stop caulking - white	None Detected
OFFICE-BS-01A	Office Building - exterior, roof	roofing material - shingle	None Detected
OFFICE-BS-01B	Office Building - exterior, roof	roofing material - shingle	None Detected
OFFICE-BS-01C	Office Building - exterior, roof	roofing material - shingle	None Detected
OFFICE-BS-02A	Office Building - exterior, roof	roofing material - vapour barrier	None Detected
OFFICE-BS-02B	Office Building - exterior, roof	roofing material - vapour barrier	None Detected
OFFICE-BS-02C	Office Building - exterior, roof	roofing material - vapour barrier	None Detected
OFFICE-BS-03A	Office Building - exterior, window	exterior window caulking - white	None Detected
OFFICE-BS-03B	Office Building - exterior, window	exterior window caulking - white	None Detected
OFFICE-BS-03C	Office Building - exterior, window	exterior window caulking - white	None Detected
OFFICE-BS-04A	Office Building - exterior, window	exterior window glazing compound - black	3.0% chrysotile
OFFICE-BS-04B	Office Building - exterior, window	exterior window glazing compound - black	Positive Stop (Not Analyzed)
OFFICE-BS-04C	Office Building - exterior, window	exterior window glazing compound - black	Positive Stop (Not Analyzed)
OFFICE-BS-05A	Office Building - storage room, wall	drywall joint-fill compound	None Detected
OFFICE-BS-05B	Office Building - storage room, wall	drywall joint-fill compound	None Detected
OFFICE-BS-05C	Office Building - office room 2, wall	drywall joint-fill compound	None Detected
OFFICE-BS-05D	Office Building - office room 2, ceiling	drywall joint-fill compound	None Detected
OFFICE-BS-05E	Office Building - office room 2, wall	drywall joint-fill compound	None Detected

Summary of Bulk Sample Analysis for Asbestos Type and Content

Sample Number	Sampling Location	Description of Sampled Material	Asbestos Type and Content
OFFICE-BS-06A	Office Building - office room 1, ceiling	1'x1' acoustic ceiling tiles - white	None Detected
OFFICE-BS-06B	Office Building - office room 1, ceiling	1'x1' acoustic ceiling tiles - white	None Detected
OFFICE-BS-06C	Office Building - office room 1, ceiling	1'x1' acoustic ceiling tiles - white	None Detected
OFFICE-BS-07A	Office Building - storage room, floor	12"x12" peel and stick tiles - blue	None Detected
OFFICE-BS-07B	Office Building - storage room, floor	12"x12" peel and stick tiles - blue	None Detected
OFFICE-BS-07C	Office Building - storage room, floor	12"x12" peel and stick tiles - blue	None Detected
PIER-BS-01A	Pier Building - exterior, roof	roofing material - black shingle	None Detected
PIER-BS-01B	Pier Building - exterior, roof	roofing material - black shingle	None Detected
PIER-BS-01C	Pier Building - exterior, roof	roofing material - black shingle	None Detected
PIER-BS-02A	Pier Building - exterior, roof	roofing material - red shingle	None Detected
PIER-BS-02B	Pier Building - exterior, roof	roofing material - red shingle	None Detected
PIER-BS-02C	Pier Building - exterior, roof	roofing material - red shingle	None Detected
SHED-BS-01A	Garden Shed - exterior, roof	roofing material - shingle	None Detected
SHED-BS-01B	Garden Shed - exterior, roof	roofing material - shingle	None Detected
SHED-BS-01C	Garden Shed - exterior, roof	roofing material - shingle	None Detected

APPENDIX E SUMMARY OF OCCURRENCES OF ASBESTOS-CONTAINING MATERIALS



Summary of Occurrences of Asbestos-Containing Materials

Building	Level	Room	Specific Location	ACM Type	Estimated Quantity	Sample Number	Asbestos Content	Friable?	Visible?	Access.	ACM Condition	Comments/ Notes
House	1	Bedroom 1	Floor	vinyl floor tiles - beige	16 sq. m	Ref: House-BS-11A	2.0% chrysotile	No	no	A	good	OBSERVED BENEATH CARPET
House	1	Bedroom 2	Floor	vinyl floor tiles - beige	16 sq. m	Ref: House-BS-11A	2.0% chrysotile	No	no	A	good	OBSERVED BENEATH CARPET
House	1	Bedroom 3	Floor	vinyl floor tiles - beige	16 sq. m	Ref: House-BS-11A	2.0% chrysotile	No	no	A	good	OBSERVED BENEATH CARPET
House	1	Hallway 1	Floor	vinyl floor tiles - beige	10 sq. m	Ref: House-BS-11A	2.0% chrysotile	No	no	A	good	OBSERVED BENEATH CARPET
House	1	Living room	Floor	vinyl floor tiles - beige	25 sq. m	House-BS-11A	2.0% chrysotile	No	no	A	good	OBSERVED BENEATH CARPET
House	Attic	Addition	Attic	vermiculite insulation	75 sq. m	Ref: Pinchin (2014 Report)	Libby Amphibole Asbestos	Yes	no	C	unknown	ACM, ATTIC ACCESS BLOCKED
House	Attic	Original Constuction	Attic	vermiculite insulation	150 sq. m	Ref: Pinchin (2014 Report)	Libby Amphibole Asbestos	Yes	yes	C	good	ACM
House	Ext	Kitchen	Wall	exterior window glazing compound - black	6 m (1 window)	Ref: House-BS-05A	0.83% chrysotile	No	yes	A	good	ACM
House	Ext	Laundry room	Wall	exterior window glazing compound - black	6 m (1 window)	House-BS-05A	0.83% chrysotile	No	yes	A	good	ACM
Office	Ext	Exterior	Exterior	exterior window glazing compound - black	55 m (7 windows)	Ref: Office-BS-04B	3.0% chrysotile	No	yes	A	good	ACM

Accessibility Classification

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

Visibility

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

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

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

**APPENDIX F LABORATORY ANALYTICAL REPORT – ASBESTOS:
POLARIZED LIGHT MICROSCOPY**





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 Order 551915532
Customer ID: 55JACQ30J
Customer PO: 122150932
Project ID:

Attn: Matthew Magnus
Stantec Consulting Ltd.
300-675 Cochrane Drive, West Tower
Markham, ON L3R 0B8
Phone: (905) 474-7700
Fax: (905) 479-9326
Collected: 12/16/2019
Received: 12/20/2019
Analyzed: 12/30/2019
Proj: Cobourg S&R

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

Client Sample ID: House-BS-01A **Lab Sample ID:** 551915532-0001

Sample Description: Exterior - house, original building, window/Exterior window caulking - white

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	White	0.0%	100%	None Detected	

Client Sample ID: House-BS-01B **Lab Sample ID:** 551915532-0002

Sample Description: Exterior - house, original building, window/Exterior window caulking - white

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	White	0.0%	100%	None Detected	

Client Sample ID: House-BS-01C **Lab Sample ID:** 551915532-0003

Sample Description: Exterior - house, original building, window/Exterior window caulking - white

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	White	0.0%	100%	None Detected	

Client Sample ID: House-BS-02A **Lab Sample ID:** 551915532-0004

Sample Description: Exterior - house, addition, window/Exterior window caulking - white

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	White	0.0%	100%	None Detected	

Client Sample ID: House-BS-02B **Lab Sample ID:** 551915532-0005

Sample Description: Exterior - house, addition, window/Exterior window caulking - white

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	White	0.0%	100%	None Detected	

Client Sample ID: House-BS-02C **Lab Sample ID:** 551915532-0006

Sample Description: Exterior - house, addition, window/Exterior window caulking - white

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	White	0.0%	100%	None Detected	

Client Sample ID: House-BS-03A **Lab Sample ID:** 551915532-0007

Sample Description: Exterior - house, original building, main entrance, door/Exterior door caulking - white

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	White	0.0%	100%	None Detected	



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

EMSL Canada Order 551915532
Customer ID: 55JACQ30J
Customer PO: 122150932
Project ID:

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

Client Sample ID: House-BS-03B **Lab Sample ID:** 551915532-0008

Sample Description: Exterior - house, original building, main entrance, door/Exterior door caulking - white

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	White	0.0%	100%	None Detected	

Client Sample ID: House-BS-03C **Lab Sample ID:** 551915532-0009

Sample Description: Exterior - house, original building, rear entrance, door/Exterior door caulking - white

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	White	0.0%	100%	None Detected	

Client Sample ID: House-BS-04A-Tar **Lab Sample ID:** 551915532-0010

Sample Description: Exterior - house, roof/Roofing material

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Black	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-04A-Tar Felt **Lab Sample ID:** 551915532-0010A

Sample Description: Exterior - house, roof/Roofing material

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Black	45.0%	55.0%	None Detected	

Client Sample ID: House-BS-04B **Lab Sample ID:** 551915532-0011

Sample Description: Exterior - house, roof/Roofing material

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Black	45.0%	55.0%	None Detected	

Client Sample ID: House-BS-04C **Lab Sample ID:** 551915532-0012

Sample Description: Exterior - house, roof/Roofing material

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Black	45.0%	55.0%	None Detected	

Client Sample ID: House-BS-05A **Lab Sample ID:** 551915532-0013

Sample Description: Exterior - house, original building, laundry room, window/Exterior window glazing compound - black

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Black	0.42%	98.8%	0.83% Chrysotile	

Client Sample ID: House-BS-05B **Lab Sample ID:** 551915532-0014

Sample Description: Exterior - house, original building, laundry room, window/Exterior window glazing compound - black

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019					Positive Stop (Not Analyzed)



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

EMSL Canada Order 551915532
Customer ID: 55JACQ30J
Customer PO: 122150932
Project ID:

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

Client Sample ID: House-BS-05C **Lab Sample ID:** 551915532-0015

Sample Description: Exterior - house, original building, kitchen, window/Exterior window glazing compound - black

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019					Positive Stop (Not Analyzed)

Client Sample ID: House-BS-06A **Lab Sample ID:** 551915532-0016

Sample Description: House - original building, foyer, ceiling/1x1 acoustic ceiling tiles - white with random pindots

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Tan	90.0%	10.0%	None Detected	

Client Sample ID: House-BS-06B **Lab Sample ID:** 551915532-0017

Sample Description: House - original building, foyer, ceiling/1x1 acoustic ceiling tiles - white with random pindots

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Tan	90.0%	10.0%	None Detected	

Client Sample ID: House-BS-06C **Lab Sample ID:** 551915532-0018

Sample Description: House - original building, foyer, ceiling/1x1 acoustic ceiling tiles - white with random pindots

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Tan	90.0%	10.0%	None Detected	

Client Sample ID: House-BS-07A **Lab Sample ID:** 551915532-0019

Sample Description: House - original building, kitchen, backsplash/Grout associated with 4x4 ceramic wall tile - grey

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-07B **Lab Sample ID:** 551915532-0020

Sample Description: House - original building, kitchen, backsplash/Grout associated with 4x4 ceramic wall tile - grey

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-07C **Lab Sample ID:** 551915532-0021

Sample Description: House - original building, kitchen, backsplash/Grout associated with 4x4 ceramic wall tile - grey

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-08A **Lab Sample ID:** 551915532-0022

Sample Description: House - original building, kitchen, backsplash/Adhesive associated with 4x4 ceramic wall tile - grey

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Beige	0.0%	100%	None Detected	



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Client Sample ID:	House-BS-08B				Lab Sample ID:	551915532-0023
Sample Description:	House - original building, kitchen, backsplash/Adhesive associated with 4x4 ceramic wall tile - grey					
TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Beige	0.0%	100%	None Detected	

Client Sample ID:	House-BS-08C				Lab Sample ID:	551915532-0024
Sample Description:	House - original building, kitchen, backsplash/Adhesive associated with 4x4 ceramic wall tile - grey					
TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Beige	0.0%	100%	None Detected	

Client Sample ID:	House-BS-09A-Skim Coat				Lab Sample ID:	551915532-0025
Sample Description:	House - original building, kitchen, wall/Plaster					
TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID:	House-BS-09A-Rough Coat				Lab Sample ID:	551915532-0025A
Sample Description:	House - original building, kitchen, wall/Plaster					
TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Gray	0.0%	100.0%	None Detected	

Client Sample ID:	House-BS-09B-Skim Coat				Lab Sample ID:	551915532-0026
Sample Description:	House - original building, laundry room, wall/Plaster					
TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID:	House-BS-09B-Rough Coat				Lab Sample ID:	551915532-0026A
Sample Description:	House - original building, laundry room, wall/Plaster					
TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Gray	0.0%	100.0%	None Detected	

Client Sample ID:	House-BS-09C-Skim Coat				Lab Sample ID:	551915532-0027
Sample Description:	House - original building, hallway 1, wall/Plaster					
TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID:	House-BS-09C-Rough Coat				Lab Sample ID:	551915532-0027A
Sample Description:	House - original building, hallway 1, wall/Plaster					
TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Gray	0.0%	100.0%	None Detected	



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Phone/Fax: (289) 997-4602 / (289) 997-4607
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Project ID:

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Client Sample ID: House-BS-09D-Skim Coat **Lab Sample ID:** 551915532-0028
Sample Description: House - original building, bedroom 3, closet, ceiling/Plaster

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-09D-Rough Coat **Lab Sample ID:** 551915532-0028A
Sample Description: House - original building, bedroom 3, closet, ceiling/Plaster

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Gray	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-09E-Skim Coat **Lab Sample ID:** 551915532-0029
Sample Description: House - original building, bedroom 2, closet, ceiling/Plaster

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-09E-Rough Coat **Lab Sample ID:** 551915532-0029A
Sample Description: House - original building, bedroom 2, closet, ceiling/Plaster

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Gray	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-09F-Skim Coat **Lab Sample ID:** 551915532-0030
Sample Description: House - original building, washroom 1, ceiling/Plaster

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-09F-Rough Coat **Lab Sample ID:** 551915532-0030A
Sample Description: House - original building, washroom 1, ceiling/Plaster

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Gray	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-09G-Skim Coat **Lab Sample ID:** 551915532-0031
Sample Description: House - original building, bedroom 1, wall/Plaster

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-09G-Rough Coat **Lab Sample ID:** 551915532-0031A
Sample Description: House - original building, bedroom 1, wall/Plaster

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Gray	0.0%	100.0%	None Detected	



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Client Sample ID: House-BS-10A **Lab Sample ID:** 551915532-0032

Sample Description: House - original building, living room, ceiling/Texture coat

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-10B **Lab Sample ID:** 551915532-0033

Sample Description: House - original building, living room, ceiling/Texture coat

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-10C **Lab Sample ID:** 551915532-0034

Sample Description: House - original building, living room, ceiling/Texture coat

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-11A **Lab Sample ID:** 551915532-0035

Sample Description: House - original building, living room, floor/Vinyl floor tile - beige

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Beige	0.0%	98.0%	2.0% Chrysotile	
TEM Grav. Reduction	12/27/2019				Positive Stop (Not Analyzed)	

Client Sample ID: House-BS-11AMastic **Lab Sample ID:** 551915532-0035A

Sample Description: House - original building, living room, floor/Vinyl floor tile - beige, mastic

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Black	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-11B **Lab Sample ID:** 551915532-0036

Sample Description: House - original building, bedroom 1, floor/Vinyl floor tile - beige

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019				Positive Stop (Not Analyzed)	
TEM Grav. Reduction	12/27/2019				Positive Stop (Not Analyzed)	

Client Sample ID: House-BS-11BMastic **Lab Sample ID:** 551915532-0036A

Sample Description: House - original building, bedroom 1, floor/Vinyl floor tile - beige, mastic

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Black	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-11C **Lab Sample ID:** 551915532-0037

Sample Description: House - original building, bedroom 3, floor/Vinyl floor tile - beige

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019				Positive Stop (Not Analyzed)	
TEM Grav. Reduction	12/27/2019				Positive Stop (Not Analyzed)	



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Customer PO: 122150932
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Client Sample ID: House-BS-11CMastic **Lab Sample ID:** 551915532-0037A

Sample Description: House - original building, bedroom 3, floor/Vinyl floor tile - beige, mastic

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Black	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-12A **Lab Sample ID:** 551915532-0038

Sample Description: House - original building, laundry room, floor/12x12 vinyl floor tiles - white with grey flecks

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	White	0.0%	100%	None Detected	
TEM Grav. Reduction	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-12AMastic **Lab Sample ID:** 551915532-0038A

Sample Description: House - original building, laundry room, floor/12x12 vinyl floor tiles - white with grey flecks, mastic

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Black	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-12B **Lab Sample ID:** 551915532-0039

Sample Description: House - original building, laundry room, floor/12x12 vinyl floor tiles - white with grey flecks

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	White	0.0%	100%	None Detected	
TEM Grav. Reduction	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-12BMastic **Lab Sample ID:** 551915532-0039A

Sample Description: House - original building, laundry room, floor/12x12 vinyl floor tiles - white with grey flecks, mastic

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Black	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-12C **Lab Sample ID:** 551915532-0040

Sample Description: House - original building, kitchen, floor/12x12 vinyl floor tiles - white with grey flecks

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	White	0.0%	100%	None Detected	
TEM Grav. Reduction	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-12CMastic **Lab Sample ID:** 551915532-0040A

Sample Description: House - original building, kitchen, floor/12x12 vinyl floor tiles - white with grey flecks, mastic

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Black	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-13A **Lab Sample ID:** 551915532-0041

Sample Description: House - addition, bedroom 4, wall/Drywall joint-fill compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	



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Client Sample ID: House-BS-13B **Lab Sample ID:** 551915532-0042
Sample Description: House - addition, bedroom 4, ceiling/Drywall joint-fill compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-13C **Lab Sample ID:** 551915532-0043
Sample Description: House - addition, washroom 2, wall/Drywall joint-fill compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-13D **Lab Sample ID:** 551915532-0044
Sample Description: House - addition, washroom 2, wall/Drywall joint-fill compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-13E **Lab Sample ID:** 551915532-0045
Sample Description: House - addition, bedroom 5, ceiling/Drywall joint-fill compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: House-BS-14A **Lab Sample ID:** 551915532-0046
Sample Description: House - addition, hallway 2, closet, floor/Carpet mastic - yellow

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Tan	0.0%	100%	None Detected	

Client Sample ID: House-BS-14B **Lab Sample ID:** 551915532-0047
Sample Description: House - addition, hallway 2, closet, floor/Carpet mastic - yellow

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Tan	0.0%	100%	None Detected	

Client Sample ID: House-BS-14C **Lab Sample ID:** 551915532-0048
Sample Description: House - addition, hallway 2, closet, floor/Carpet mastic - yellow

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Tan	0.0%	100%	None Detected	

Client Sample ID: House-BS-15A **Lab Sample ID:** 551915532-0049
Sample Description: House - original building, washroom 1, floor/Vinyl sheet flooring - beige with tile pattern

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Beige	0.0%	100%	None Detected	



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Client Sample ID: House-BS-15B **Lab Sample ID:** 551915532-0050

Sample Description: House - original building, washroom 1, floor/Vinyl sheet flooring - beige with tile pattern

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Beige	0.0%	100%	None Detected	

Client Sample ID: House-BS-15C **Lab Sample ID:** 551915532-0051

Sample Description: House - original building, washroom 1, floor/Vinyl sheet flooring - beige with tile pattern

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Beige	0.0%	100%	None Detected	

Client Sample ID: House-BS-16A **Lab Sample ID:** 551915532-0052

Sample Description: House - addition, washroom 2, floor/Vinyl sheet flooring - grey

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Gray	<0.25%	100%	None Detected	

Client Sample ID: House-BS-16B **Lab Sample ID:** 551915532-0053

Sample Description: House - addition, washroom 2, floor/Vinyl sheet flooring - grey

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Gray	<0.25%	100%	None Detected	

Client Sample ID: House-BS-16C **Lab Sample ID:** 551915532-0054

Sample Description: House - addition, washroom 2, floor/Vinyl sheet flooring - grey

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Gray	0.27%	99.7%	None Detected	

Client Sample ID: House-BS-17A **Lab Sample ID:** 551915532-0055

Sample Description: Exterior - house, around electrical conduit/Fire stop caulking - white

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	White	0.0%	100%	None Detected	

Client Sample ID: House-BS-17B **Lab Sample ID:** 551915532-0056

Sample Description: Exterior - house, around electrical conduit/Fire stop caulking - white

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	White	0.0%	100%	None Detected	

Client Sample ID: House-BS-17C **Lab Sample ID:** 551915532-0057

Sample Description: Exterior - house, around electrical conduit/Fire stop caulking - white

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	White	0.0%	100%	None Detected	



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Phone/Fax: (289) 997-4602 / (289) 997-4607
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Client Sample ID: Office-BS-01A **Lab Sample ID:** 551915532-0058

Sample Description: Exterior - office building, roof/Roofing material - shingle

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Black	1.4%	98.6%	None Detected	

Client Sample ID: Office-BS-01B **Lab Sample ID:** 551915532-0059

Sample Description: Exterior - office building, roof/Roofing material - shingle

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Black	0.96%	99.0%	None Detected	

Client Sample ID: Office-BS-01C **Lab Sample ID:** 551915532-0060

Sample Description: Exterior - office building, roof/Roofing material - shingle

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Black	0.73%	99.3%	None Detected	

Client Sample ID: Office-BS-02A **Lab Sample ID:** 551915532-0061

Sample Description: Exterior - office building, roof/Roofing material - vapour barrier

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Black	3.6%	96.4%	None Detected	

Client Sample ID: Office-BS-02B **Lab Sample ID:** 551915532-0062

Sample Description: Exterior - office building, roof/Roofing material - vapour barrier

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Black	3.8%	96.2%	None Detected	

Client Sample ID: Office-BS-02C **Lab Sample ID:** 551915532-0063

Sample Description: Exterior - office building, roof/Roofing material - vapour barrier

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Black	4.3%	95.7%	None Detected	

Client Sample ID: Office-BS-03A **Lab Sample ID:** 551915532-0064

Sample Description: Exterior - office building, window/Exterior window caulking - white

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	White	0.0%	100%	None Detected	

Client Sample ID: Office-BS-03B **Lab Sample ID:** 551915532-0065

Sample Description: Exterior - office building, window/Exterior window caulking - white

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	White	0.0%	100%	None Detected	



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Client Sample ID: Office-BS-03C **Lab Sample ID:** 551915532-0066

Sample Description: Exterior - office building, window/Exterior window caulking - white

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	White	0.0%	100%	None Detected	

Client Sample ID: Office-BS-04A **Lab Sample ID:** 551915532-0067

Sample Description: Exterior - office building, window/Exterior window glazing compound - black

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Black	0.0%	97.0%	3.0% Chrysotile	

Client Sample ID: Office-BS-04B **Lab Sample ID:** 551915532-0068

Sample Description: Exterior - office building, window/Exterior window glazing compound - black

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019				Positive Stop (Not Analyzed)	

Client Sample ID: Office-BS-04C **Lab Sample ID:** 551915532-0069

Sample Description: Exterior - office building, window/Exterior window glazing compound - black

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019				Positive Stop (Not Analyzed)	

Client Sample ID: Office-BS-05A **Lab Sample ID:** 551915532-0070

Sample Description: Office building - storage room, wall/Drywall joint-fill compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: Office-BS-05B **Lab Sample ID:** 551915532-0071

Sample Description: Office building - storage room, wall/Drywall joint-fill compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: Office-BS-05C **Lab Sample ID:** 551915532-0072

Sample Description: Office building - office room 2, wall/Drywall joint-fill compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: Office-BS-05D **Lab Sample ID:** 551915532-0073

Sample Description: Office building - office room 2, ceiling/Drywall joint-fill compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	



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 Order 551915532
Customer ID: 55JACQ30J
Customer PO: 122150932
Project ID:

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

Client Sample ID: Office-BS-05E **Lab Sample ID:** 551915532-0074
Sample Description: Office building - office room 2, wall/Drywall joint-fill compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	White	0.0%	100.0%	None Detected	

Client Sample ID: Office-BS-06A **Lab Sample ID:** 551915532-0075
Sample Description: Office building - office room 1, ceiling/1x1 acoustic ceiling tiles - white

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Brown	90.0%	10.0%	None Detected	

Client Sample ID: Office-BS-06B **Lab Sample ID:** 551915532-0076
Sample Description: Office building - office room 1, ceiling/1x1 acoustic ceiling tiles - white

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Brown	90.0%	10.0%	None Detected	

Client Sample ID: Office-BS-06C **Lab Sample ID:** 551915532-0077
Sample Description: Office building - office room 1, ceiling/1x1 acoustic ceiling tiles - white

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2019	Brown	90.0%	10.0%	None Detected	

Client Sample ID: Office-BS-07A **Lab Sample ID:** 551915532-0078
Sample Description: Office building - storage room, floor/12x12 peel and stick tiles - blue

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/30/2019	Gray/Black	0.0%	100%	None Detected	

Client Sample ID: Office-BS-07B **Lab Sample ID:** 551915532-0079
Sample Description: Office building - storage room, floor/12x12 peel and stick tiles - blue

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/30/2019	Gray/Black	0.0%	100%	None Detected	

Client Sample ID: Office-BS-07C **Lab Sample ID:** 551915532-0080
Sample Description: Office building - storage room, floor/12x12 peel and stick tiles - blue

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/30/2019	Gray/Black	0.0%	100%	None Detected	

Client Sample ID: Pier-BS-01A **Lab Sample ID:** 551915532-0081
Sample Description: Exterior - pier building, roof/Roofing material - black shingle

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Black	4.0%	96.0%	None Detected	



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

EMSL Canada Order 551915532
Customer ID: 55JACQ30J
Customer PO: 122150932
Project ID:

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

Client Sample ID: Pier-BS-01B **Lab Sample ID:** 551915532-0082

Sample Description: Exterior - pier building, roof/Roofing material - black shingle

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Black	3.9%	96.1%	None Detected	

Client Sample ID: Pier-BS-01C **Lab Sample ID:** 551915532-0083

Sample Description: Exterior - pier building, roof/Roofing material - black shingle

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Black	3.5%	96.5%	None Detected	

Client Sample ID: Pier-BS-02A **Lab Sample ID:** 551915532-0084

Sample Description: Exterior - pier building, roof/Roofing material - red shingle

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Black	1.2%	98.8%	None Detected	

Client Sample ID: Pier-BS-02B **Lab Sample ID:** 551915532-0085

Sample Description: Exterior - pier building, roof/Roofing material - red shingle

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Black	1.6%	98.4%	None Detected	

Client Sample ID: Pier-BS-02C **Lab Sample ID:** 551915532-0086

Sample Description: Exterior - pier building, roof/Roofing material - red shingle

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Black	2.3%	97.7%	None Detected	

Client Sample ID: Shed-BS-01A **Lab Sample ID:** 551915532-0087

Sample Description: Exterior - garden shed, roof/Roofing material - shingle

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Black	0.77%	99.2%	None Detected	

Client Sample ID: Shed-BS-01B **Lab Sample ID:** 551915532-0088

Sample Description: Exterior - garden shed, roof/Roofing material - shingle

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Black	0.45%	99.5%	None Detected	

Client Sample ID: Shed-BS-01C **Lab Sample ID:** 551915532-0089

Sample Description: Exterior - garden shed, roof/Roofing material - shingle

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2019	Black	<0.25%	100%	None Detected	



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 Order 551915532
Customer ID: 55JACQ30J
Customer PO: 122150932
Project ID:

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

Analyst(s):

Ioana Taina	PLM (6) PLM Grav. Reduction (48) TEM Grav. Reduction (3)
Kira Ramphal	PLM (40)
Natalie D'Amico	PLM Grav. Reduction (1)
Stephanie Achaiya	PLM Grav. Reduction (2)

Reviewed and approved by:

Matthew Davis or other approved signatory
or Other Approved Signatory

None Detected = <0.1%. EMSL maintains liability limited to cost of analysis. 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. Mississauga, ON NVLAP Lab Code 200877-0

Report amended: 01/02/2020 14:47:30 Replaces initial report from: 12/27/2019 16:03:52 Reason Code: Data Entry-Change to Appearance

**APPENDIX G SUMMARY OF RESULTS OF ANALYSIS OF PAINT
CHIP SAMPLES FOR LEAD CONTENT**



Summary of Results of Analysis of Paint Samples for Lead Content

Sample Number	Sampling Location	Description	Lead Content (ppm)
House-PS-01	House - exterior, wood finishing	white coloured paint	4,000
House-PS-02	House - exterior, vinyl siding	white coloured paint	<83
House-PS-03	House - exterior, wood deck, railing	red coloured paint	<82
House-PS-04	House - exterior, staircase, floor	grey coloured paint	<80
House-PS-05	House - exterior, original building, living room, door	red coloured paint	<80
House-PS-06	House - original building, kitchen, wall	grey coloured paint	<82
House-PS-07	House - original building, laundry room, wall	beige coloured paint	<81
House-PS-08	House - original building, bedroom 2, door frame	white coloured paint	150
House-PS-09	House - original building, bedroom 2, closet, door frame	brown coloured paint	99
House-PS-10	House - original building, bedroom 2, closet, wall	yellow coloured paint	<81
Office-PS-01	Office Building - exterior, side entrance, door	red coloured paint	<81
Office-PS-02	Office Building - exterior, south wall, wood board	white coloured paint	<80
Office-PS-03	Office Building - locker room, floor	grey coloured paint	<81
Office-PS-04	Office Building - locker room, door	white coloured paint	<83
Office-PS-05	Office Building - office room 2, wall	light green coloured paint	<80
Office-PS-06	Office Building - storage room, door frame	beige coloured paint	<83
Office-PS-07	Office Building - locker room, old wood siding	white coloured paint	160,000

Sample Number	Sampling Location	Description	Lead Content (ppm)
Pier-PS-01	Pier Building - exterior, storage room 2, door	white coloured paint	310
Pier-PS-02	Pier Building - workshop, wall	white coloured paint	170
Shed-PS-01	Garden Shed - exterior, door	red coloured paint	<80
Shed-PS-02	Garden Shed - exterior, door frame	white coloured paint	<80
Shed-PS-03	Garden Shed - door, interior side	grey coloured paint	<80

**APPENDIX H LABORATORY ANALYTICAL REPORT – LEAD:
PAINT CHIP ANALYSIS**



**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	551915536
CustomerID:	55JACQ30J
CustomerPO:	122150932
ProjectID:	

Attn: **Ronald Ng**
Stantec Consulting Ltd.
300-675 Cochrane Drive, West Tower
Markham, ON L3R 0B8

Phone: (905) 474-7700
 Fax: (905) 479-9326
 Received: 12/23/19 9:00 AM
 Collected: 12/17/2019

Project: **Cobourg S&R****Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)***

<i>Client SampleDescription</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Weight</i>	<i>RDL</i>	<i>Lead Concentration</i>
House-PS-01 551915536-0001	12/16/2019	12/27/2019	0.2527 g	80 ppm	4000 ppm
	Site: Exterior - house, wood finishing Desc: White coloured paint				
House-PS-02 551915536-0002	12/16/2019	12/27/2019	0.2414 g	83 ppm	<83 ppm
	Site: Exterior - house, vinyl siding Desc: White coloured paint				
House-PS-03 551915536-0003	12/16/2019	12/27/2019	0.2451 g	82 ppm	<82 ppm
	Site: Exterior - house, wood deck, railing Desc: Red coloured paint				
House-PS-04 551915536-0004	12/16/2019	12/27/2019	0.2522 g	80 ppm	<80 ppm
	Site: Exterior - house, staircase, floor Desc: Grey coloured paint				
House-PS-05 551915536-0005	12/16/2019	12/27/2019	0.2487 g	80 ppm	<80 ppm
	Site: Exterior - house, original building, living room, door Desc: Red coloured paint				
House-PS-06 551915536-0006	12/16/2019	12/27/2019	0.2435 g	82 ppm	<82 ppm
	Site: House - original building, kitchen, wall Desc: Grey coloured paint				
House-PS-07 551915536-0007	12/16/2019	12/27/2019	0.2463 g	81 ppm	<81 ppm
	Site: House - original building, laundry room, wall Desc: Beige coloured paint				
House-PS-08 551915536-0008	12/16/2019	12/27/2019	0.2516 g	80 ppm	150 ppm
	Site: House - original building, bedroom 2, door frame Desc: White coloured paint				
House-PS-09 551915536-0009	12/16/2019	12/27/2019	0.2478 g	81 ppm	99 ppm
	Site: House - original building, bedroom 2, closet, door frame Desc: Brown coloured paint				

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. 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. Samples received in good condition unless otherwise noted. "<" (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 A2LA Accredited Cert #2845.08; AIHA-LAP, LLC - ELLAP #196142

Initial report from 12/30/2019 08:32:49

**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	551915536
CustomerID:	55JACQ30J
CustomerPO:	122150932
ProjectID:	

Attn: **Ronald Ng**
Stantec Consulting Ltd.
300-675 Cochrane Drive, West Tower
Markham, ON L3R 0B8

Phone: (905) 474-7700
 Fax: (905) 479-9326
 Received: 12/23/19 9:00 AM
 Collected: 12/17/2019

Project: **Cobourg S&R****Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)***

<i>Client SampleDescription</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Weight</i>	<i>RDL</i>	<i>Lead Concentration</i>
House-PS-10 551915536-0010	12/16/2019	12/27/2019	0.2457 g	81 ppm	<81 ppm
	Site: House - original building, bedroom 2, closet, wall Desc: Yellow coloured paint				
Office-PS-01 551915536-0011	12/17/2019	12/27/2019	0.2476 g	81 ppm	<81 ppm
	Site: Exterior - office building, side entrance, door Desc: Red coloured paint				
Office-PS-02 551915536-0012	12/17/2019	12/27/2019	0.2498 g	80 ppm	<80 ppm
	Site: Exterior - office building, south wall, wood board Desc: White coloured paint				
Office-PS-03 551915536-0013	12/17/2019	12/27/2019	0.2477 g	81 ppm	<81 ppm
	Site: Office building - locker room, floor Desc: Grey coloured paint				
Office-PS-04 551915536-0014	12/17/2019	12/27/2019	0.2411 g	83 ppm	<83 ppm
	Site: Office building - locker room, door Desc: White coloured paint				
Office-PS-05 551915536-0015	12/17/2019	12/27/2019	0.2509 g	80 ppm	<80 ppm
	Site: Office building - office room 2, wall Desc: Light green coloured paint				
Office-PS-06 551915536-0016	12/17/2019	12/27/2019	0.2420 g	83 ppm	<83 ppm
	Site: Office building - storage room, door frame Desc: Beige coloured paint				
Office-PS-07 551915536-0017	12/17/2019	12/27/2019	0.2479 g	8100 ppm	160000 ppm
	Site: Office building - locker room, old wood siding Desc: White coloured paint				
Pier-PS-01 551915536-0018	12/17/2019	12/27/2019	0.2462 g	81 ppm	310 ppm
	Site: Exterior - pier building, storage room 2, door Desc: White coloured paint				

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. 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. Samples received in good condition unless otherwise noted. "<" (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 A2LA Accredited Cert #2845.08; AIHA-LAP, LLC - ELLAP #196142

Initial report from 12/30/2019 08:32:49



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 551915536
CustomerID: 55JACQ30J
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ProjectID:

Attn: **Ronald Ng**
Stantec Consulting Ltd.
300-675 Cochrane Drive, West Tower
Markham, ON L3R 0B8

Phone: (905) 474-7700
Fax: (905) 479-9326
Received: 12/23/19 9:00 AM
Collected: 12/17/2019

Project: **Cobourg S&R**

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

<i>Client SampleDescription</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Weight</i>	<i>RDL</i>	<i>Lead Concentration</i>
Pier-PS-02 551915536-0019	12/17/2019	12/27/2019	0.2422 g	83 ppm	170 ppm
	Site: Pier building - workshop, wall Desc: White coloured paint				
Shed-PS-01 551915536-0020	12/16/2019	12/23/2019	0.2488 g	80 ppm	<80 ppm
	Site: Exterior - garden shed, door Desc: Red coloured paint				
Shed-PS-02 551915536-0021	12/16/2019	12/23/2019	0.2504 g	80 ppm	<80 ppm
	Site: Exterior - garden shed, door frame Desc: White coloured paint				
Shed-PS-03 551915536-0022	12/16/2019	12/23/2019	0.2509 g	80 ppm	<80 ppm
	Site: Garden shed - door, interior side Desc: Grey coloured paint				

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. 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. Samples received in good condition unless otherwise noted. "<" (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 A2LA Accredited Cert #2845.08; AIHA-LAP, LLC - ELLAP #196142

Initial report from 12/30/2019 08:32:49

**APPENDIX I LABORATORY ANALYTICAL REPORT – MOULD
BULK**





RESULTS OF LABORATORY ANALYSES:

JOB NO. 33608.00

To:	Matthew Magnus	Date of report:	2019/12/24
Company:	Stantec Consulting Ltd. - Markham, ON	Date of sampling:	2019/12/17
Client Project:	122150932	Analyst:	Susan Du
Client Address:	675 Cochrane Drive, Unit #300, Markham, ON L3R 0B8	Date Received:	2019/12/21

BULK / TAPELIFT / BIOTAPE SAMPLE NO.:	M-01	M-02	M-03	-	-	-
Location:	Office building - storage room, partition wall	Office building - storage room, exterior wall	Office building - storage room, exterior wall, insulation			
Serial #:	101976	100642	N/A			
Expiry date:	2020/07	2020/07	N/A			
FUNGAL IDENTIFICATION: ^a	ELEMENTS: MICROSCOPIC OBSERVATIONS ^b (RATING ^c):					
<i>Chaetomium</i> NOS	mycelia	-	-	-		
	spores	-	tr	-		
<i>Cladosporium</i> NOS	mycelia	-	-	-		
	spores	-	tr	-		
<i>Stachybotrys</i> NOS	mycelia	-	-	-		
	spores	-	tr	-		
OTHER OBSERVATIONS:						
background rating	3+	3+	3+			
FUNGAL GROWTH INDICATED?^d:	N	N	N			

AIHA LAP, LLC LAB NO: 171117

Samples were received in satisfactory condition and tested in accordance with SOP 5.4.1.1.3. These results relate only to the samples tested.

^a NOS = not otherwise specified.

^b Mounted in lactofuchsin / lactic acid, or other medium as required, with 50-100 fields examined in bright field microscopy at 400x magnification.

^c - = not detected; tr = 10⁰ - 10¹ elements in total; 1+ = 10⁰ - 10¹ elements in each of ~25% fields; 2+ = 10¹ - 10² elements in each of ~50% fields; 3+ = 10² - 10³ elements in each of ~75 fields; 4+ => 75% fields obscured.

^d Possibility of fungal growth *in situ* based on microscopic observations; Y = yes; N = no; ? = ambiguous. For explanation please refer to the final page of this report.



RESULTS OF LABORATORY ANALYSES:

JOB NO. 33608.00

To:	Matthew Magnus	Date of report:	2019/12/24
Company:	Stantec Consulting Ltd. - Markham, ON	Date of sampling:	2019/12/17
Client Project:	122150932	Analyst:	Susan Du
Client Address:	675 Cochrane Drive, Unit #300, Markham, ON L3R 0B8	Date Received:	2019/12/21

END OF REPORT

Examined By

Released By



Susan Du, MSc
Analyst

Mike Saleh, MHSc
Analyst





RESULTS OF LABORATORY ANALYSES:

JOB NO. 33608.00

To:	Matthew Magnus	Date of report:	2019/12/24
Company:	Stantec Consulting Ltd. - Markham, ON	Date of sampling:	2019/12/17
Client Project:	122150932	Analyst:	Susan Du
Client Address:	675 Cochrane Drive, Unit #300, Markham, ON L3R 0B8	Date Received:	2019/12/21

Guidance on the interpretation of microscopic findings Samples of bulk materials as well as tape lift samples from potentially contaminated surfaces may be examined microscopically to assess the potential of these materials to be supporting fungal growth and serving as indoor fungal amplification sites. Guidelines on indoor microbial contamination proposed by Health Canada (HC. 1995. Indoor air quality in office buildings: A technical guide. Federal-Provincial Advisory Committee on Environmental and Occupational Health. Ottawa: Environmental Health Directorate 93-EHD-166 rev.) state unambiguously that indoor, active fungal growth sites are unacceptable regardless of the extent to which these amplifiers impact on the indoor airborne spore-load. Fungal spores are commonly borne on air currents and settle on flat surfaces as a matter of course. Thus, the observation of fungal spores alone is insufficient to characterize a specimen as a growth site. This judgment primarily requires the microscopic visualization of fungal filaments ("hyphae", or *en masse*, "mycelia"). Additionally, the identification of different kinds of fungi usually requires the observation of spores (e.g. conidia, ascospores, etc.) along with the organs responsible for their production (e.g. conidiophores, ascomata, etc.). However, the latter rarely persist long after the spores have been produced, making definitive identification difficult or impossible in aged specimens. The rating system used by Sporometrics to score the frequency of structures observed microscopically is based on a 5-point assessment of 50-100 microscopic fields, usually taken at 400 x magnification. This system uses the following rating criteria:

Descriptor	Criteria (based on 50-100 fields)	Interpretation of growth <i>in situ</i> according to observations:	
		Spores alone	Spores and spore-bearing structures or mycelia
tr	10 ⁰ -10 ¹ elements in total	growth not indicated	growth not indicated
1+	10 ⁰ -10 ¹ elements per ~25% fields	unclear	growth indicated
2+	10 ¹ -10 ² elements per ~50% fields	growth indicated	growth indicated
3+	10 ² -10 ³ elements per ~75% fields	growth indicated	growth indicated
4+	> 75% fields obscured by elements	growth indicated	growth indicated

APPENDIX J LABORATORY ANALYTICAL REPORT – PCBS





EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077

Phone: (856) 303-2500 Fax: (856) 858-4571 Email: EnvChemistry2@emsl.com

Attn:

Matthew Magnus
Stantec Consulting Ltd.
300 - 675 Cochrane Drive, West Tower
Markham, ON L3R 0B8

1/2/2020

Phone: (905) 474-7700
Fax: (905) 479-9326

The following analytical report covers the analysis performed on samples submitted to EMSL Analytical, Inc. on 12/24/2019. The results are tabulated on the attached data pages for the following client designated project:

Cobourg S&R PO#122150932

The reference number for these samples is EMSL Order #011916113. Please use this reference when calling about these samples. If you have any questions, please do not hesitate to contact me at (856) 303-2500.

Approved By:

Phillip Worby, Environmental Chemistry
Laboratory Director



The test results contained within this report meet the requirements of NELAP and/or the specific certification program that is applicable, unless otherwise noted.
NELAP Certifications: NJ 03036, NY 10872, PA 68-00367, CA ELAP 1877

The reporting limits for sample -0001 are elevated for one or more Aroclors due to matrix interference.

The samples associated with this report were received in good condition unless otherwise noted. This report relates only to those items tested as received by the laboratory. The QC data associated with the sample results meet the recovery and precision requirements established by the NELAP, unless specifically indicated. All results for soil samples are reported on a dry weight basis, unless otherwise noted. This report may not be reproduced except in full and without written approval by EMSL Analytical, Inc.

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (856) 303-2500 / (856) 858-4571

<http://www.EMSL.com>EnvChemistry2@emsl.com

EMSL Order:	011916113
CustomerID:	JACQ30J
CustomerPO:	551915520
ProjectID:	

Attn: **Matthew Magnus**
Stantec Consulting Ltd.
300 - 675 Cochrane Drive, West Tower
Markham, ON L3R 0B8

Phone: (905) 474-7700
 Fax: (905) 479-9326
 Received: 12/24/19 11:40 AM

Project: **Cobourg S&R PO#122150932****Analytical Results**

Client Sample Description House-PCB-01 **Collected:** 12/16/2019 **Lab ID:** 011916113-0001

Method	Parameter	Result	RL	Units	Prep Date & Analyst	Analysis Date & Analyst
GC-SVOA						
3540C/8082A	Aroclor-1016	ND D	0.94	mg/Kg	12/26/2019 AC	12/30/19 0:00 EH
3540C/8082A	Aroclor-1221	ND D	9.4	mg/Kg	12/26/2019 AC	12/30/19 0:00 EH
3540C/8082A	Aroclor-1232	ND D	0.94	mg/Kg	12/26/2019 AC	12/30/19 0:00 EH
3540C/8082A	Aroclor-1242	ND D	0.94	mg/Kg	12/26/2019 AC	12/30/19 0:00 EH
3540C/8082A	Aroclor-1248	ND D	0.94	mg/Kg	12/26/2019 AC	12/30/19 0:00 EH
3540C/8082A	Aroclor-1254	ND D	0.94	mg/Kg	12/26/2019 AC	12/30/19 0:00 EH
3540C/8082A	Aroclor-1260	ND D	0.94	mg/Kg	12/26/2019 AC	12/30/19 0:00 EH
3540C/8082A	Aroclor-1262	ND D	0.94	mg/Kg	12/26/2019 AC	12/30/19 0:00 EH
3540C/8082A	Aroclor-1268	ND D	0.94	mg/Kg	12/26/2019 AC	12/30/19 0:00 EH

Client Sample Description Office-PCB-01 **Collected:** 12/17/2019 **Lab ID:** 011916113-0002

Method	Parameter	Result	RL	Units	Prep Date & Analyst	Analysis Date & Analyst
GC-SVOA						
3540C/8082A	Aroclor-1016	ND D	0.94	mg/Kg	12/26/2019 AC	12/27/19 0:00 EH
3540C/8082A	Aroclor-1221	ND D	0.94	mg/Kg	12/26/2019 AC	12/27/19 0:00 EH
3540C/8082A	Aroclor-1232	ND D	0.94	mg/Kg	12/26/2019 AC	12/27/19 0:00 EH
3540C/8082A	Aroclor-1242	ND D	0.94	mg/Kg	12/26/2019 AC	12/27/19 0:00 EH
3540C/8082A	Aroclor-1248	ND D	0.94	mg/Kg	12/26/2019 AC	12/27/19 0:00 EH
3540C/8082A	Aroclor-1254	ND D	0.94	mg/Kg	12/26/2019 AC	12/27/19 0:00 EH
3540C/8082A	Aroclor-1260	ND D	0.94	mg/Kg	12/26/2019 AC	12/27/19 0:00 EH
3540C/8082A	Aroclor-1262	ND D	0.94	mg/Kg	12/26/2019 AC	12/27/19 0:00 EH
3540C/8082A	Aroclor-1268	ND D	0.94	mg/Kg	12/26/2019 AC	12/27/19 0:00 EH

Definitions:

MDL - method detection limit
 J - Result was below the reporting limit, but at or above the MDL
 ND - indicates that the analyte was not detected at the reporting limit
 RL - Reporting Limit (Analytical)
 D - Dilution

APPENDIX K CRITERIA FOR ASBESTOS-CONTAINING MATERIALS



DESIGNATED SUBSTANCES AND HAZARDOUS BUILDING MATERIALS ASSESSMENT SEARCH AND RESCUE STATION (SAR), COBOURG, ONTARIO

APPENDIX K Criteria for Assessing Asbestos-Containing Materials
February 21, 2020

A description of the criteria used in evaluating the condition, accessibility and exposure risk of asbestos-containing materials is provided below. The criteria are generally based on the Public Services and Procurement Canada (PSPC) document entitled *Asbestos Management Standard* (June 5, 2017) and industry standards of practice.

ASSESSMENT OF CONDITION

Spray Applied Fireproofing, Insulation and Textured Finishes

In evaluating the condition of ACM spray applied as fireproofing, thermal insulation or texture, decorative or acoustic finishes, the following criteria apply:

Good

Surface of material shows no significant signs of damage, deterioration or delamination. Up to one percent visible damage to surface is allowed within range of GOOD. Evaluation of sprayed fireproofing requires the Assessor to be familiar with the irregular surface texture typical of sprayed asbestos products. GOOD condition includes unencapsulated or unpainted fireproofing or texture finishes, where no delamination or damage is observed, and encapsulated fireproofing or texture finishes where the encapsulation has been applied after the damage or fallout occurred.

Poor

Sprayed materials show signs of damage, delamination or deterioration. More than one percent damage to surface of ACM spray.

In observation areas, where damage exists in isolated locations, both GOOD and POOR condition may be reported. The extent or percentage of each condition will be recorded on the Assessor's assessment form.

FAIR condition is not utilized or considered as a valid criterion in the evaluation of sprayed fireproofing, sprayed insulation, or texture coat finishes.

The evaluation of ACM spray applied as fireproofing, non-mechanical thermal insulation, or texture, decorative or acoustic finishes which are present above ceilings, may be limited by the number of observations made, and by building components such as ducts or full height walls that obstruct the above ceiling observations. Persons entering the ceiling area are advised to be watchful for ACM DEBRIS prior to accessing or working above ceilings in areas of building with ACM, regardless of the reported condition.

MECHANICAL INSULATION

In evaluating the condition of mechanical insulation (on boilers, breaching, ductwork, piping, tanks, equipment etc.) the following criteria are used:



DESIGNATED SUBSTANCES AND HAZARDOUS BUILDING MATERIALS ASSESSMENT SEARCH AND RESCUE STATION (SAR), COBOURG, ONTARIO

APPENDIX K Criteria for Assessing Asbestos-Containing Materials
February 21, 2020

Good

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

Fair

Minor penetration damage to jacketed insulation (cuts, tears, nicks, deterioration or delamination) or undamaged insulation that has never been jacketed. Insulation is exposed but not showing surface disintegration. The extent of missing insulation ranges should be minor to none.

Poor

Original insulation jacket is missing, damaged, deteriorated or delaminated. Insulation is exposed and significant areas have been dislodged. Damage cannot be readily repaired.

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

4.1.2 Non-Friable and Potentially Friable Materials

Non-friable materials generally have little potential to release airborne fibres, even when damaged by mechanical breakage. However, some non-friable materials, i.e., exterior asbestos cement products, may have deteriorated so that the binder no longer effectively contains the asbestos fibres. In such cases of significantly deteriorated non-friable material, the material will be treated as a friable product.

