

**HAZARDOUS BUILDING MATERIALS SURVEY**  
**OF**  
**312 MAIN STREET**  
**VANCOUVER, BRITISH COLUMBIA**

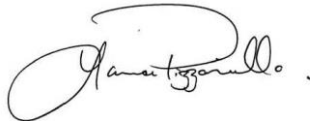
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- Appendix I: Asbestos Laboratory Analytical Results  
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## **1.0 INTRODUCTION**

Further to your request, EHS Partnerships Ltd. (EHS<sup>P</sup>) completed a pre-renovation hazardous building material assessment of the commercial building located at 312 Main Street in Vancouver, British Columbia (to be referred as hereafter as “the Subject Building”).

The assessment was limited to include only those areas of the Subject Building that were identified to EHS<sup>P</sup> to form 312 Main Street and that are detailed on the drawings provided in **Appendix II** of this report.

Due to access restrictions, some areas of the Subject Building were excluded from the assessment. These areas include Storage 002, Weapons 003A, Janitor Room 066, Storage 010, Office 009, Janitor Room 039, Office 040, Office 057, Storage 052, Corridor 051, Storage 055, Office 054, Storage 059, Range 053, Lockers 235, I.T. Room 314, Storage 424, DNA File Storage 439, Storage 405, Office 404, Open Office 402 and Office 403.

The assessment was conducted between March 19, 2012 and March 23, 2012 by Vanessa Kernel, Project Coordinator for EHS<sup>P</sup>, and Kristen Bannerholt, Technician for EHS<sup>P</sup>, under the direction of Lance Pizzariello, Project Manager and Associate for EHS<sup>P</sup>.

## **2.0 SCOPE OF WORK**

The survey was completed to determine the presence and extent of asbestos-containing materials (ACM) and lead-based paint (LBPs), and to identify potential sources of polychlorinated biphenyls (PCB) in fluorescent light ballasts, mercury in thermostats and fluorescent light tubes, and ozone-depleting substances (ODS) in items or systems such as air conditioning units and refrigerators.

Only limited demolition was conducted during the survey to identify concealed hazardous building materials within wall, ceiling, floor and foundation cavities.

As part of the survey, EHS<sup>P</sup> reviewed previous sample results provided by the City of Vancouver (to be referred as hereafter as “previous sample results”).

### **3.0 REGULATIONS AND GUIDELINES**

#### **3.1 Applicable Federal Legislation**

##### **3.1.1 Transportation of Dangerous Goods**

The transportation of hazardous wastes is governed under the Transportation of Dangerous Goods (TDG) Act and Regulations which outline the requirements for storage, handling, and transportation of hazardous waste, amongst other products.

#### **3.2 Provincial Regulations & Guidelines**

In British Columbia, the management of hazardous materials in the work place is regulated by WorkSafeBC under the Workers' Compensation Act (effective April 15, 1998), as amended by the Workers' Compensation (Occupational Health and Safety) Amendment Act (effective October 1, 1999).

##### **3.2.1 Hazardous Wastes**

In British Columbia, environmental matters pertaining to waste generally fall under the jurisdiction of the British Columbia Ministry of Environment (MoE), pursuant to the Environmental Management Act. The key waste regulation under the Environmental Management Act relating to hazardous building materials is the Hazardous Waste Regulation (HWR), including amendments up to B.C. Reg. 63/2009, April 1, 2009.

The HWR provides the requirements for the proper handling, storage, transportation, treatment, recycling and disposal of hazardous wastes in the province. The regulation also outlines the materials and criteria to be used to characterize waste as hazardous.

##### **3.2.2 Asbestos-Containing Materials (ACMs)**

ACMs are regulated under Part 6 (sections 6.1 to 6.32 - Asbestos) of British Columbia Occupational Health and Safety Regulation (BC Reg.) 296/97.

Additionally, the Workers' Compensation Board of British Columbia has published "*Safe Handling of Asbestos, A Manual of Standard Practices*". This manual outlines basic information on asbestos and asbestos products, health hazards requirements for worker protection, safe work procedures and principles that should be followed in selecting the most suitable technique for the safe abatement of ACM. This document provides a guide to current practices that are to be followed in the Province of British Columbia.

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### 3.2.3 Lead-Based Paint (LBPs)

LBPs are regulated under Part 6 (sections 6.59 to 6.69 - Lead) of British Columbia Occupational Health and Safety Regulation (BC Reg.) 296/97. These sections of the regulation apply to any workplace where a worker is or may be exposed to potentially hazardous levels of inorganic lead.

Additionally, WorkSafeBC has recently published a lead coating and paint safety manual entitled, *“Lead-Containing Paint and Coatings, Preventing Exposure in the Construction Industry”*, dated June 2011. This manual outlines basic information on lead and lead-containing products, health hazards requirements for worker protection, safe work procedures and principles that should be followed in selecting the most suitable technique for the safe abatement of lead contamination, providing a general guide to current practices that are to be followed in the Province of British Columbia.

### 3.2.4 Ozone-Depleting Substances (ODSs)

Provincial regulatory framework detailing the requirements for the safe management, storage and disposal of ozone-depleting substances are provided by the British Columbia Ministry of Environment and that are specifically outlined in the Ozone-Depleting Substances and Other Halocarbons Regulation including amendments up to B.C. Reg. 4/2010, January 14, 2010.

## 4.0 METHODOLOGY

When sampling for hazardous building materials, room numbers on the drawings provided by the City of Vancouver were assigned by EHS<sup>P</sup> to ensure continuity and accuracy of information compiled during the survey.

All work was conducted in accordance with standards outlined by WorkSafeBC, and the National Institute for Occupational Safety and Health (NIOSH).

### 4.1 Asbestos-Containing Materials

The assessment determined the extent of ACM within generally accessible spaces the Subject Building. The survey was completed on a room-by-room basis to provide a complete inventory within these generally accessible spaces.

Asbestos sample locations were referenced to the drawings provided by the City of Vancouver. Room number reference drawings are presented in Appendix II.

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The systems which were reviewed included, but were not limited to:

- **Mechanical:** Building mechanical systems such as the heating, ventilating and air conditioning (HVAC) systems were inspected for the presence of ACM. The inspection included insulation on ductwork, pipe work and fittings, such as steam, condensate, chilled water, glycol, and domestic hot and cold water.
- **Structural:** The method of construction was determined, including interior room areas, mezzanines and roofing support systems. Fireproofing, fire-stop and other materials installed as a part of the structure were reviewed.
- **Architectural:** The presence of ACM was assessed in building materials and finishes such as floor and ceiling tiles, texture coats, asbestos sheet materials, wall joint compound, condensation control applications, spray-applied acoustical materials, and spray-applied insulation on areas of the structure.

Materials suspected of containing asbestos were sampled. Multiple samples of drywall joint compound were collected, homogenized, and combined for composite analysis. The asbestos samples were analyzed for asbestos type and percentage content using Polarized Light Microscopy in accordance with (NIOSH) methodologies and United States Environmental Protection Agency dispersion staining techniques (EPA/600/R-93/116).

#### **4.2 Lead-Based Paint**

Lead sample locations were referenced to the drawings provided by the City of Vancouver. Room number reference drawings are presented in Appendix II.

A Niton X-Ray Fluorescence (XRF) spectroscopy detector was used to make measurements on various painted surfaces inside the facility. The Niton XRF is designed to detect and quantify the amount of lead present primarily in painted surfaces. Measurements were made following Niton XRF standard operating procedures for lead paint measurement.

#### **4.3 Polychlorinated Biphenyls (PCB)**

During the survey, the Subject Building was visually assessed for the presence of PCBs in fluorescent light ballasts.

#### **4.4 Mercury-Containing Materials**

During the survey, the Subject Building was visually assessed for the presence of mercury-containing thermostats, sensors, and other equipment.

#### **4.5 Ozone Depleting Substances (ODS)**

During the survey, the Subject Building was visually assessed for the presence of potential sources of ODSs, including air conditioning units, water coolers, refrigerators, and freezers.

### **5.0 RESULTS AND DISCUSSION**

#### **5.1 Asbestos**

One-hundred and forty-eight (148) samples of materials suspected of containing asbestos were collected and submitted for analysis. Thirty-four (34) of these samples were found to be asbestos-containing. Table 1: Results of Asbestos Analysis, provides details of the sampling program and analysis results.

The laboratory reports are provided in Appendix I.

**Table 1: Results of Asbestos Analysis**

<b>Sample Number</b>	<b>Sample Location / Description</b>	<b>Asbestos Detected: Yes/No; Type</b>
<b>SB-01</b>	<b>Basement, Mechanical Room 034 / Insulation from Hot Water Holding Tank</b>	<b>Yes; Chrysotile 5.0%</b>
<b>SB-02</b>	<b>Basement, Mechanical Room 034 / Insulation from Hot Water Heating Return Pipe Fitting</b>	<b>Yes; Chrysotile 30.0%</b>
SB-03	Basement, Mechanical Room 034 / Insulation from Hot Water Heating Supply Pipe Fitting	No
SB-04	Basement, Mechanical Room 034 / Insulation from Chilled Water Return Pipe Fitting	No
SB-05	Basement, Mechanical Room 034 / Insulation from Chilled Water Supply Pipe Fitting	No
<b>SB-06</b>	<b>Basement, Mechanical Room 034 / Insulation from Hot Water Heating Supply Pipe Straight Run</b>	<b>Yes; Chrysotile 2.0%, Amosite 10.0%</b>
SB-07	Basement, Mechanical Room 034 / Debris from Exhaust Chimney Hatch	No
<b>SB-08</b>	<b>Basement, Mechanical Room 034 / Insulation from Domestic Water Pipe Fitting</b>	<b>Yes; Chrysotile 30%</b>

<b>Sample Number</b>	<b>Sample Location / Description</b>	<b>Asbestos Detected: Yes/No; Type</b>
<b>SB-09</b>	<b>Basement, Mechanical Room 034 / Insulation from Domestic Water Pipe Straight Run</b>	<b>Yes; Chrysotile 1.0%, Amosite 15.0%</b>
<b>SB-10 (A)</b>	<b>Basement, Mechanical Room 034 / 1'x1' Yellow Floor Tile</b>	<b>Yes; Chrysotile 2.0 %</b>
SB-10 (B)	Basement, Mechanical Room 034 / Mastic under 1'x1' Yellow Floor Tile	No
SB-11	Basement, Mechanical Room 034 / Brick Mortar from Exhaust Chimney	No
<b>SB-12</b>	<b>Basement, Mechanical Room 034 / Insulation from Hot Water Heating Return Pipe Fitting</b>	<b>Yes; Chrysotile 25.0%</b>
SB-13	Basement, Mechanical Room 034 / Insulation from Hot Water Heating Supply Pipe Fitting	No
SB-14	Basement, Room 005 / 2'x4' Ceiling Tile	No
SB-15	Basement, Vestibule 060 / Terracota Brick & Mortar	No
<b>SB-16</b>	<b>Basement, Room 046 / Brown Duct Joint Mastic</b>	<b>Yes; Chrysotile 5.0%</b>
SB-17	Basement, Lockers 046 / Interior Drywall Joint Comound	No
<b>SB-18 (A)</b>	<b>Basement, BC TEL 006 / 1'x1' Cream with Tan Streaks Floor Tile</b>	<b>Yes; Chrysotile 2.0%</b>
SB-18 (B)	Basement, BC TEL 006 / Mastic under 1'x1' Cream with Tan Streaks Floor Tile	No
SB-19	Basement, BC TEL 006 / Grey Soft Mastic around Electrical through Wall Penetration	No
<b>SB-20</b>	<b>Basement, BC TEL 006 / Black Soft Mastic around Electrical through Wall Penetration</b>	<b>Yes; Chrysotile 8.0%</b>
SB-21	Basement, BC TEL 006 / Light Green Duct Joint Mastic	No



<b>Sample Number</b>	<b>Sample Location / Description</b>	<b>Asbestos Detected: Yes/No; Type</b>
<b>SB-22 (A)</b>	<b>Hydro 005 / 9"x9" Green Floor Tile</b>	<b>Yes; Chrysotile 5.0%</b>
SB-22 (B)	Hyrdo 005 / Mastic under 9"x9" Green Floor Tile	No
SB-23	Basement, Mechanical Room 034 / Insulation from Chilled Water Supply Pipe Fitting	No
SB-24	Basement, Mechanical Room 034 / Insulation from Chilled Water Return Pipe Fitting	No
SB-25	Basement, Storage 043 / Insulation from Hot Water Heating Return Pipe Fitting	No
SB-26	Basement, Storage 043 / Insulation from Hot Water Heating Supply Pipe Fitting	No
SB-27	Basement, Corridor 023 / Interior Drywall Joint Compound	No
<b>SB-28</b>	<b>Basement, Storage 035 / Interior Drywall Joint Compound</b>	<b>Yes; Chrysotile 0.25%</b>
SB-29	Basement, Workroom 014 / Interior Drywall Joint Compound	No
SB-30	Basement, Storage 038 / Plaster on Ceiling	No
SB-31	Basement, Storage 043 / Plaster on Perimeter Wall	No
<b>SB-32 (A)</b>	<b>Basement, Office 019 / 1'x1' Tan Floor Tile</b>	<b>Yes; Chrysotile 0.25%</b>
SB-32 (B)	Basement, Office 019 / Mastic under 1'x1' Tan Floor Tile	No
SB-33	Basement, Locker 063 / Brown Mastic Puck holding Cork Board	No
SB-34	Basement, Corridor 058 / 2'x4' White Ceiling Tile	No

<b>Sample Number</b>	<b>Sample Location / Description</b>	<b>Asbestos Detected: Yes/No; Type</b>
<b>SB-35</b>	<b>Basement, Storage 031 / Brown Duct Joint Mastic</b>	<b>Yes; Chrysotile 8.0%</b>
SB-36	Basement, Corridor 023 / 1'x1' Blue with Speckles Floor Tile	No
SB-37	Basement, Corridor 023 / Levelling Compound & Mastic under 1'x1' Blue with Speckles Floor Tile	No
SB-38	Basement, Corridor 058 / 1'x1' Blue Floor Tile	No
SB-39	Basement, Corridor 058 / Mastic & Levelling Compound under 1'x1' Blue Floor Tile	No
S1-01	First Floor, Lobby 101 / Brick Floor Mortar	No
S1-02	First Floor, Lobby 101 / Interior Drywall Joint Compound	No
S1-03	First Floor, Beat Squad Lunch Room 113/ 1'x1' Grey Floor Tile & Mastic	No
S1-04	First Floor, Beat Squad Office Space 111 / Plaster on West Perimeter Wall	No
S1-05	First Floor, Beat Squad Office Space 111 / Interior Drywall Joint Compound	No
S1-06	First Floor, Corridor 112 / Grey Duct Joint Mastic	No
S1-07	First Floor, Beat Squad Lunch Room 113 / 1'x1' Blue Floor Tile	No
S1-08	First Floor, Woman's Washroom 115 / Plaster behind Tiles (In Wall Hatch)	No
<b>S1-09</b>	<b>First Floor, Corridor 116 / Red Duct Joint Mastic</b>	<b>Yes; Chrysotile 5.0%</b>
S1-10	First Floor, Corridor 116 / Terracota Brick Mortar	No

<b>Sample Number</b>	<b>Sample Location / Description</b>	<b>Asbestos Detected: Yes/No; Type</b>
S1-11	First Floor, Corridor 116 / Terracota Brick	No
<b>S1-12</b>	<b>First Floor, Corridor 116 / Red Duct Joint Mastic</b>	<b>Yes; Chrysotile 5.0%</b>
S1-13	First Floor, Corridor 116 / Drywall Joint Compound on West Perimeter Wall	No
S1-14	First Floor, Corridor 116 / Plaster over Teraccota Bricks	No
S1-15	First Floor, Receiving Bay 118 / Interior Texturized Plaster Wall	No
<b>S1-16</b>	<b>First Floor, Receiving Bay 118 / Insulation from Domestic Water Pipe Fitting</b>	<b>Yes; Chrysotile 8.0%</b>
<b>S1-17</b>	<b>First Floor, Receiving Bay 118 / Insulation from Domestic Water Pipe Straight Run</b>	<b>Yes; Chrysotile 25.0%</b>
S1-18	First Floor, Corridor 106 / Interior Drywall Joint Compound	No
S1-19	First Floor, Interview Room 121 / 2'x4' Ceiling Tile (Large Fissures)	No
S1-20	First Floor, Office 105 (Security) / Grey Vinyl Sheet Flooring	No
S1-21	First Floor, Report Writing Office Space 120 / 1'x1' Dark Grey Floor Tile & Mastic	No
S1-22	First Floor, Report Writing Office Space 120 / 1'x1' Light Grey Floor Tile & Mastic	No
S1-23	First Floor, Mechanical 122 / Insulation from Chilled Water Return Pipe Fitting	No
S1-24	First Floor, Mechanical 122 / Insulation from Chilled Water Supply Pipe Fitting	No
S1-25	First Floor, Mechanical 122 / Insulation from Hot Water Heating Return Pipe Fitting	No

<b>Sample Number</b>	<b>Sample Location / Description</b>	<b>Asbestos Detected: Yes/No; Type</b>
S1-26	First Floor, Mechanical 122 / Insulation from Hot Water Heating Supply Fitting	No
S1-27	First Floor, Mechanical 122 / Grey Fire Stop around Gas Line	No
S1-28	First Floor, Mechanical 122 / Grey Paper Insulation from HVAC Fan	No
<b>S1-29</b>	<b>First Floor, Men's Staff Washroom 124 / Insulation from Domestic Water Pipe Straight Run in Wall Cavity</b>	<b>Yes; Amosite 10.0 %</b>
S1-30	First Floor, Woman's Staff Washroom 125 / Interior Drywall Joint Compound	No
S1-31	First Floor, Mail Room 123 / Interior Drywall Joint Compound	No
S1-32	First Floor, Vault Room 126 / Plaster on Perimeter Wall	No
<b>S1-33 (A)</b>	<b>First Floor, Stores 117 / 1'x1' Brown with White Streaks Floor Tile</b>	<b>Yes; Chrysotile 3.0%</b>
S1-33 (B)	First Floor, Stores 117 / Mastic under 1'x1' Brown with White Streaks Floor Tile	No
S1-34	First Floor, Stores 117 / Drywall Joint Compound from Perimeter Wall	No
S1-35	First Floor, Stores 117 / 1'x1' Dark Grey Floor Tile & Mastic	No
S1-36	First Floor, Stores 117 / 1'x1' Black Floor Tile & Mastic	No
S1-37	First Floor, Stores 117 / Drywall Joint Compound from Perimeter Wall	No
S2-01	Second Floor, Office 210 / 1'x1' Cream with Speckles Floor Tile & Mastic	No
<b>S2-02 (A)</b>	<b>Second Floor, Office 212 / 1'x1' Cream with Streaks Floor Tile</b>	<b>Yes; Chrysotile 3.0%</b>

<b>Sample Number</b>	<b>Sample Location / Description</b>	<b>Asbestos Detected: Yes/No; Type</b>
S2-02 (B)	Second Floor, Office 212 / Mastic under 1'x1' Cream with Streaks Floor Tile	No
<b>S2-03</b>	<b>Second Floor, File Storage 214 / Floor Levelling Compound</b>	<b>Yes; Chrysotile 12.0%</b>
<b>S2-04 (A)</b>	<b>Second Floor, Training Room 220 / 1'x1' Cream Floor Tile</b>	<b>Yes; Chrysotile 3.0%</b>
S2-04 (B)	Second Floor, Training Room 220 / Mastic under 1'x1' Cream Floor Tile	No
<b>S2-05 (A)</b>	<b>Second Floor, Office 219 / 1'x1' Tan Floor Tile</b>	<b>Yes; Chrysotile 2.0%</b>
S2-05 (B)	Second Floor, Office 219 / Mastic under 1'x1' Tan Floor Tile	No
S2-06	Second Floor, Janitor's Room 252 / 1'x1' Blue Floor Tile (Top Layer) & Mastic	No
<b>S2-07 (A)</b>	<b>Second Floor, Janitor's Room 252 / 1'x1' Cream Floor Tile (Bottom Layer)</b>	<b>Yes; Chrysotile 2.0%</b>
S2-07 (B)	Second Floor, Janitor's Room 252 / Mastic under 1'x1' Cream Floor Tile (Bottom Layer)	No
<b>S2-08 (A)</b>	<b>Second Floor, Office 247 / 1'x1' Tan with Streaks Floor Tile</b>	<b>Yes; Chrysotile 2.0%</b>
S2-08 (B)	Second Floor, Office 247 / Mastic under 1'x1' Tan with Streaks Floor Tile	No
S2-09	Second Floor, Mechanical Room 230 / Insulation from Chilled Water Supply Pipe Fitting	No
S2-10	Second Floor, Mechanical Room 230 / Insulation from Chilled Water Return Pipe Fitting	No
S2-11	Second Floor, Mechanical Room 230 / Insulation from Hot Water Heating Supply Pipe Fitting	No
S2-12	Second Floor, Mechanical Room 230 / Insulation from Hot Water Heating Return Pipe Fitting	No

<b>Sample Number</b>	<b>Sample Location / Description</b>	<b>Asbestos Detected: Yes/No; Type</b>
S2-13	Second Floor, Women's Washroom 229 / Drywall Joint Compound from Perimeter Wall	No
S2-14	Second Floor, Office 209 / Plaster from Perimeter Wall	No
S2-15	Second Floor, Open Office 205 / Plaster from Perimeter Wall	No
S2-16	Second Floor, Corridor 224 / Interior Drywall Joint Compound	No
S2-17	Second Floor, Corridor 234 / Interior Drywall Joint Compound	No
S2-18	Second Floor, Office 247 / Interior Drywall Joint Compound	No
S2-19	Second Floor, Meeting Room 248 / Dark Grey Window Caulking (Brittle)	No
S2-20	Second Floor, 911 Centre 239 / Stipple Coat on Ceiling	No
S2-21	Second Floor, 911 Centre 239 / Fire Spray	No
S2-22	Second Floor, 911 Centre 239 / Grey Duct Joint Mastic	No
S2-23	Second Floor, 911 Centre 239 / Green Duct Joint Mastic	No
S2-24	Second Floor, Telephone Room 241 / Grey Duct Joint Mastic	No
S3-01	Third Floor, North West Open Office 302 / Plaster from Perimeter Wall	No
S3-02	Third Floor, Lunch Room 308 / Plaster from Perimeter Wall	No
S3-03	Third Floor, South West Open Office 315 / Plaster from Perimeter Wall	No

<b>Sample Number</b>	<b>Sample Location / Description</b>	<b>Asbestos Detected: Yes/No; Type</b>
S3-04	Third Floor, South West Open Office 315 / Interior Drywall Joint Compound	No
S3-05	Third Floor, Corridor 313 / Interior Drywall Joint Compound	No
S3-06	Third Floor, Corridor 307 / Interior Drywall Joint Compound	No
S3-07	Third Floor, North West Open Office 302 / Red Floor Tile & Mastic	No
S3-08	Third Floor, North West Open Office 302 / Grey Floor Tile & Mastic	No
<b>S3-09 (A)</b>	<b>Third Floor, North West Open Office 302 / 1'x1' Cream Floor Tile</b>	<b>Yes; Chrysotile 2.0%</b>
S3-09 (B)	Third Floor, North West Open Office 302 / Mastic under 1'x1' Cream Floor Tile	No
S3-10	Third Floor, North West Open Office 302 / Floor Levelling Compound	No
<b>S3-11 (A)</b>	<b>Third Floor, North West Open Office 302 / 1'x1' Yellow with White Streaks Floor Tile</b>	<b>Yes; Chrysotile 2.0%</b>
S3-11 (B)	Third Floor, North West Open Office 302 / Mastic under 1'x1' Yellow with White Streaks Floor Tile	No
S3-12	Third Floor, Office 303 / 1'x1' White with Blue Streaks Floor Tile & Mastic	No
<b>S3-13 (A)</b>	<b>Third Floor, Office 303 / 1'x1' White Floor Tile</b>	<b>Yes; Chrysotile 3.0%</b>
S3-13 (B)	Third Floor, Office 303 / Mastic under 1'x1' White Floor Tile	No
S3-14	Third Floor, Office 304 / 1'x1' Grey with Speckles Floor Tile & Mastic	No
S3-15	Third Floor, Photo Lab 311 / 1'x1' Black with White Flecks Floor Tile & Mastic	No

<b>Sample Number</b>	<b>Sample Location / Description</b>	<b>Asbestos Detected: Yes/No; Type</b>
S3-16	Third Floor, Photo Lab 311 / 1'x1' Off White with Black Flecks Floor Tile & Mastic	No
S3-17	Third Floor, Photo Lab 311 / 2'x2' White Floor Tile & Mastic	No
S3-18	Third Floor, North East Open Office 305 / 1'x1' Blue with Blue Flecks Floor Tile & Mastic	No
S3-19	Third Floor, Blood Drying 312 / Grey Sheet Flooring & Levelling Compound	No
S3-20	Third Floor, Lobby 301 / Yellow Sheet Flooring	No
<b>S3-21</b>	<b>Third Floor, Lobby 300 / Red Duct Joint Mastic</b>	<b>Yes; Chrysotile 6.0%</b>
S3-22	Third Floor, Photo Lab 311 / Grey Duct Joint Mastic	No
S3-23	P Third Floor, Photo Lab 311 / Brown Sheet Flooring (under Black Floor Tiles)	No
S3-24	Third Floor, Mechanical 306 / Insulation from Domestic Water Pipe Fitting	No
S3-25	Third Floor, Lobby 301 / Plaster on Elevator Shaft	No
S3-26	Third Floor, South West Open Office 315 / Black Window Caulking	No
S4-01	Fourth Floor, Lounge 410 / Plaster from Perimeter Wall	No
S4-02	Fourth Floor, lounge 417 / Plaster from Perimeter Wall	No
S4-03	Fourth Floor, Corridor 406 / Interior Drywall Joint Compound	No
S4-04	Fourth Floor, Corridor 420 / Interior Drywall Joint Compound	No



<b>Sample Number</b>	<b>Sample Location / Description</b>	<b>Asbestos Detected: Yes/No; Type</b>
<b>S4-05 (A)</b>	<b>Fourth Floor, Kitchen 422 / 1'x1' Cream with Brown Streaks Floor Tile</b>	<b>Yes; Chrysotile 5.0%</b>
S4-05 (B)	Fourth Floor, Kitchen 422 / Mastic under 1'x1' Cream with Brown Streaks Floor Tile	No
<b>S4-06</b>	<b>Fourth Floor, Waiting Room 436 / Grey Window Caulking (from Grey Window)</b>	<b>Yes; Chrysotile 8.0%</b>
<b>S4-07</b>	<b>Fourth Floor, Open Office 442 / Grey Window Caulking (from Brown Window)</b>	<b>Yes; Chrysotile 6.0%</b>
S4-08	Fourth Floor, Office 443/ Stipple on Ceiling	No
S4-09	Fourth Floor, Mechanical 433 / Insulation from Hot Water Heating Return Pipe Fitting	No
S4-10	Fourth Floor, Mechanical 433 / Insulation from Hot Water Heating Supply Pipe Fitting	No
S4-11	Fourth Floor, Mechanical 433 / Insulation from Chilled Water Return Pipe Fitting	No
S4-12	Fourth Floor, Mechanical 433 / Insulation from Chilled Water Supply Pipe Fitting	No
S4-13	Fourth Floor, Lounge 421 / Popcorn Stipple on Ceiling & Beam	No
<b>S4-14</b>	<b>Fourth Floor, Open Office 442 / Red Duct Joint Mastic</b>	<b>Yes; Chrysotile 6.0%</b>
S4-15	Fourth Floor, Woman's Washroom 426 / Plaster Wall Behind Small Tiles	No
S4-16	Fourth Floor, Woman's Washroom 426 / Grout from Small Wall Tiles	No
S4-32	North East Stairwell / Residual Radiator Pipe Insulation	No
S5-01	Roof, Chilled Water Room 500 / Insulation from 10" Chilled Water Return Pipe Fitting	No

Sample Number	Sample Location / Description	Asbestos Detected: Yes/No; Type
S5-02	Roof, Chilled Water Room 500 / Insulation from 10" Chilled Water Supply Pipe Fitting	No
S5-03	Roof, Chilled Water Room 500 / Insulation from 3" Chilled Water Return Pipe Fitting	No
S5-04	Roof, Chilled Water Room 500 / Plaster around Perimeter Wall Penetration for Chilled Water Supply Pipe	No
S5-05	Roof, Chilled Water Room 500 / Mastic around Perimeter Wall Penetration for Chilled Water Supply Pipe	No

Note: \* denotes that the asbestos content was verified with point counting.

\*\* asbestos was identified in the floor tile only, not the mastic.

Based on the above-listed sample results, previous sample results and on our visual observations, EHS<sup>P</sup> offers the following conclusions regarding the presence and extent of confirmed and presumed ACMs within the Subject Building:

#### ***Hot Water Heating (HWH) System***

HWH Holding Tank:

Asbestos was detected in thermal mechanical insulation of the HWH Holding Tank in Basement Mechanical Room 034.

Fittings of the HWH System:

Asbestos was detected in thermal mechanical insulation on fittings of the HWH pipes in Basement Mechanical Room 034.

Asbestos is presumed to be present in the thermal mechanical insulation on fittings of the HWH pipes currently enclosed within inaccessible pipe chases of the Subject Building.

Straight Run Pipes of the HWH System:

Asbestos was detected in thermal mechanical insulation on the straight runs of the HWH pipes in Basement Mechanical Room 034.

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Asbestos is presumed to be present in the thermal mechanical insulation on the straight runs of the HWH pipes currently enclosed within inaccessible pipe chases of the Subject Building.

Gaskets of the HWH:

The gaskets of the HWH system are presumed to be asbestos containing.

### ***Chilled Water (CW) System***

Fittings of the CW System:

Asbestos was detected in thermal mechanical insulation on fittings of the CW pipes in Basement Mechanical Room 034.

Asbestos is presumed to be present in thermal mechanical insulation on fittings of the CW pipes currently enclosed within inaccessible pipe chases of the Subject Building.

Straight Run Pipes of the CW System:

Asbestos was detected in thermal mechanical insulation on the straight runs of the CW pipes in Basement Mechanical Room 034.

Asbestos is presumed to be present in thermal mechanical insulation on the straight runs of the CW pipes currently enclosed within inaccessible pipe chases of the Subject Building.

Gaskets of the CW System:

The gaskets of the CW system are presumed to be asbestos containing.

### ***Domestic Water (DW) System***

Fittings of the DW System:

Asbestos was detected in thermal mechanical insulation on fittings of the DW pipes in the Basement Mechanical Room 034, in the First Floor Receiving Bay 118, and within inaccessible pipe chases of the Subject Building.

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Straight Run Pipes of the DW System:	Asbestos was detected in the thermal mechanical insulation on the straight runs of the DW pipes in the Basement Mechanical Room 034, in the First Floor Receiving Bay 118, and within inaccessible pipe chases of the Subject Building.
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Gaskets of the DW System:	The gaskets of the DW system are presumed to be asbestos containing.
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***Storm Water (SW) Drainage System***

Fittings of the SW Drainage System:	Fittings of the SW Drainage system are not insulated.
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Straight Runs of the SW Drainage System:	Straight run pipes of the SW Drainage system are not insulated.
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Gaskets of the SW Drainage System:	The gaskets of the SW Drainage system pipes are presumed to be asbestos containing.
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***Sewage (S) Drainage System***

Fittings of the S Drainage System:	Fittings of the S Drainage system are not insulated.
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Straight Run Pipes of the S Drainage System:	Straight run pipes of the S Drainage system are not insulated.
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Gaskets of the S Drainage System:	The gaskets of the S Drainage pipes are presumed to be asbestos containing.
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***Air Delivery Ducts***

Asbestos was detected in Red and Brown Duct Joint Mastic found on air delivery ducts throughout the Subject Building.

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### ***Flooring Systems***

#### **Basement:**

Asbestos was detected in the 1'x1' Yellow Floor Tiles by the South door of the Basement Mechanical Room 034.

Asbestos was detected in the 1'x1' Cream with Brown Streaks floor tiles in Storage Room 035 and BC TEL Room 006.

Asbestos was detected in the 1'x1' Tan Floor Tiles in Office 019.

Asbestos was not detected in the floor tile mastics.

#### **First Floor:**

Asbestos was detected in the 1'x1' Brown with White Streaks Floor Tiles in Stores 117 of the First Floor.

Asbestos was not detected in the floor tile mastics.

#### **Second Floor:**

Asbestos was detected in 1'x1' floor tiles throughout the Second floor. Asbestos containing 1'x1' floor tiles were identified under carpet tiles and in multiple layers in some locations.

Asbestos was detected in the leveling compound under floor tiles throughout the Second Floor.

Asbestos was not detected in the floor tile mastics.

#### **Third Floor:**

Asbestos was detected in 1'x1' floor tiles throughout the Third Floor. Asbestos containing 1'x1' floor tiles were identified to be under carpet tiles and in multiple layers in some locations.

Asbestos was not detected in the floor tile mastics.

Fourth Floor:

Asbestos was detected in the 1'x1' Cream with Brown Streaks Floor Tiles in Kitchen 422, Storage 423, Coffee Room 407, and Storage Room 418 of the Fourth Floor.

Asbestos was not detected in the floor tile mastics.

*Drywall Systems*

Previous sample results identified asbestos-containing joint compound is present at various locations throughout the Subject Building. However, previous sample results do not identify precise sample point locations.

Current sample results indicate some of the drywall joint compounds on interior partition walls in the Basement of the Subject Building contain asbestos.

Current sample results also indicate drywall joint compounds on interior partition walls throughout Levels 1 through 4 of the Subject Building do not contain asbestos.

Based on the above-noted inconsistencies, EHS<sup>P</sup> recommends that the drywall joint compounds throughout the Subject Building be treated as asbestos-containing.

*Plaster Systems*

Asbestos was not detected in plaster applications on the ceilings, interior walls, or perimeter walls of the Subject Building.

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### ***Acoustic Ceiling Tile Systems***

Asbestos was not detected in the ceiling tiles of the Subject Building.

### ***Window Systems***

Asbestos was detected in grey window caulking throughout the Subject Building.

### **\*\*\*\*\*CAUTIONARY NOTES\*\*\*\*\***

Pre-formed asbestos containing block insulation is suspected to be present behind radiant heat registers throughout the Subject Building.

Asbestos-containing insulation is suspected to be present in the interior of the boiler exhaust chimney that runs throughout the Subject Building.

A second type of fire spray insulation was identified above Electrical Room 242 on the Second Floor, however, was inaccessible for sampling. This fire spray insulation should be treated as asbestos-containing until testing can be completed.

## **5.2 Lead-Based Paint**

One-hundred and forty-eight (148) surfaces suspected of containing lead-based paint were identified within the Subject Building and were analyzed for lead content. Six (6) of the painted surfaces were found to be lead-based. Table 2: Results of XRF Analysis, provides details of the sampling program and analysis.

**Table 2: XRF Paint Measurements**

<b>Sample</b>	<b>Location <sup>(1)</sup></b>	<b>Colour</b>	<b>Results (mg/cm<sup>2</sup>) <sup>(2)</sup></b>	<b>Lead-Based Paint <sup>(3)</sup> (Yes/No)</b>
L-1	Basement, Vestibule 060: Concrete Floor	Red	0.02	No
L-2	Basement, Corridor 058: Wall	White	0.84	No
L-3	Basement, Corridor 058: Door	Blue	0.29	No
L-4	Basement, W.C. 061: 3"x3" Ceramic Tiles on Wall	White	0.26	No
L-5	<b>Basement, W.C. 061: 3"x3" Ceramic Tiles at Base of Wall</b>	<b>Black</b>	<b>42.9</b>	<b>Yes</b>

<b>Sample</b>	<b>Location <sup>(1)</sup></b>	<b>Colour</b>	<b>Results (mg/cm<sup>2</sup>) <sup>(2)</sup></b>	<b>Lead-Based Paint <sup>(3)</sup> (Yes/No)</b>
L-6	Basement, W.C. 061: Walls	Cream	0.24	No
L-7	Basement, W.C. 061: Small Tiles on Floor	White	0.09	No
L-8	Basement, W.C. 061: Small Tiles on Floor	Black	0.02	No
L-9	Basement, Corridor 058: Elevator Doors	Blue	0.29	No
L-10	Basement, Corridor 041: Walls	White	0.33	No
L-11	Basement, Corridor 041: Door	Blue	0.29	No
L-12	South West Stairwell: Walls	Beige	0.14	No
L-13	South West Stairwell: Walls	Cream	0.09	No
L-14	Basement, South West Stairwell: Door	Cream	0.11	No
L-15	Basement, Corridor 042: Walls	White	0.11	No
L-16	Basement, Corridor 042: Elevator Doors	Blue	0.18	No
L-17	Basement, Mechanical Room 034: South Door	Blue	0.23	No
L-18	Basement, Corridor 042: Trim at Base of Walls	Blue	0.04	No
L-19	Basement, Storage 043: Door	Blue	0.52	No
L-20	Basement, Storage 043: Paint on Pipe Insulation	Yellow	0.02	No
L-21	Basement, Storage 043: Pipe Hanger	Red Primer	0.03	No
L-22	Basement, Locker 062: Wall	Yellow	0.1	No
L-23	Basement, Locker 062: Wall	White	0.19	No
L-24	Basement, Locker 062: Door	Beige	0.09	No
L-25	Basement, Locker 062: Door Frame	Brown	0.18	No
L-26	Basement, Mechanical Room 034: Concrete Floor	Grey	0.07	No
L-27	Basement, Mechanical Room 034: Concrete Floor	Orange	0.07	No
L-28	Basement, Mechanical Room 034: Walls	White	0.12	No



<b>Sample</b>	<b>Location <sup>(1)</sup></b>	<b>Colour</b>	<b>Results (mg/cm<sup>2</sup>) <sup>(2)</sup></b>	<b>Lead-Based Paint <sup>(3)</sup> (Yes/No)</b>
L-29	Basement, Mechanical Room 034: Paint on Pipe Insulation	Bright Yellow	0.02	No
L-30	Basement, Mechanical Room 034: Paint on Pipe Insulation	Green	0.05	No
L-31	Basement, Mechanical Room 034: Paint on Pipe Insulation	Yellow	0.04	No
L-32	Basement, Mechanical Room 034: Paint on Pipe Insulation	Brown	0.48	No
L-33	Basement, Mechanical Room 034: Paint on Valve	Blue	0.02	No
L-34	Basement, Mechanical Room 034: Paint on Air Duct	White	0.4	No
L-35	Basement, Mechanical Room 034: Paint on Pipe Insulation	Light Blue	0.02	No
<b>L-36</b>	<b>Basement, Mechanical Room 034: Paint on Gas Pipe to Boiler</b>	<b>Bright Yellow</b>	<b>1.6</b>	<b>Yes</b>
L-37	Basement, Mechanical Room 034: Boiler	Teal	0.02	No
L-38	Basement, Mechanical Room 034: Paint on Pipe	Black	0.19	No
L-39	Basement, Mechanical Room 034: Motor	Red	0.74	No
L-40	Basement, Mechanical Room 034: Motor	Blue	0.04	No
L-41	Basement, Room 014: Paint on Concrete Floor	Grey	0.03	No
L-42	Basement, Workroom 014: Paint on Cinderblock Wall	White	0.02	No
L-43	Basement, Workroom 014: Door	Blue	0.07	No
L-44	Basement, Workroom 014: Walls	White	0.02	No
L-45	First Floor, Lobby 101: Walls	White	0.5	No
L-46	First Floor, Lobby 101: Door	Blue	0.03	No
L-47	West Stairwell: Wall	Light Blue	0.03	No
L-48	First Floor, Corridor 102: Walls/Ceiling in Ceiling Space	Black	0.06	No
L-49	First Floor, Small Room off Corridor 109: Wall	Dark Blue	0.02	No
L-50	First Floor, Small Room off Corridor 109: Small Floor Tiles	White/Black	0.02	No
L-51	First Floor, Corridor 102: Glazing on Brick Floor	Clear	0.02	No

<b>Sample</b>	<b>Location <sup>(1)</sup></b>	<b>Colour</b>	<b>Results (mg/cm<sup>2</sup>) <sup>(2)</sup></b>	<b>Lead-Based Paint <sup>(3)</sup> (Yes/No)</b>
L-52	First Floor, Beat Squad Office Space 111: Lockers	Grey	0.9	No
L-53	First Floor, Woman's Washroom 115: Small Wall Tile	Cream	0.02	No
L-54	First Floor, Woman's Washroom 115: Small Wall Tile	White	0.03	No
L-55	First Floor, Corridor 116: Door	Blue	0.06	No
L-56	First Floor, Corridor 116: Door	Blue	0.25	No
L-57	First Floor, Corridor 116: Exterior Door	Blue	0.02	No
L-58	First Floor, Receiving Bay 118: Paint on Concrete Floor	Grey	0.02	No
L-59	First Floor, Receiving Bay 118: Garage Door	Blue	0.06	No
L-60	First Floor, Receiving Bay 118: Paint on Concrete Wall	White	0.13	No
L-61	First Floor, Corridor 106: Door	Blue	0.16	No
L-62	First Floor, Corridor 106: Door	Blue	0.03	No
L-63	First Floor, Corridor 106: Wall	White	0.02	No
L-64	First Floor, PSC 103 (Security): Wall	Blue	0.02	No
L-65	First Floor, PSC 103 (Security): Wall	Cream	0.07	No
L-66	First Floor, PSC 104 (Security): Door	Blue	0.02	No
L-67	First Floor, PSC 104 (Security): Wall	Grey	0.13	No
L-68	First Floor, PSC 104 (Security): Door	Blue	0.24	No
L-69	First Floor, Mechanical 122: Door	Brown	0.03	No
L-70	First Floor, Men's Staff Washroom 124: Small Wall Tile	Cream	0.02	No
L-71	First Floor, Men's Staff Washroom 124: Glazing on Brick Floor	Clear	0.03	No
L-72	First Floor, Corridor 106: Wall	Light Blue	0.02	No
L-73	First Floor, Janitor's Closet 127: Wall	Tan	0.03	No
L-74	First Floor, Janitor's Closet 127: Ceramic Tile on Wall	White	0.7	No

Sample	Location <sup>(1)</sup>	Colour	Results (mg/cm <sup>2</sup> ) <sup>(2)</sup>	Lead-Based Paint <sup>(3)</sup> (Yes/No)
L-75	First Floor, Janitor's Closet 127: Ceramic Tile on Floor	White	0.04	No
L-76	First Floor, Vault Room 126: Door to Vault	Grey	0.8	No
L-77	First Floor, Stores 117: Door	Brown	0.28	No
L-78	First Floor, Stores 117: Wall	White	0.03	No
L-79	First Floor, Stores 117: Shelve	Orange	0.46	No
L-80	First Floor, Stores 117: Wall	White	0.06	No
L-81	First Floor, Stores 117: Door	Black	0.17	No
L-82	Second Floor, B.C. Office 210: Wall	White	0.03	No
L-83	Second Floor, B.C. Office 210: Door	Blue	0.1	No
L-84	Second Floor, Men's Washroom 225: Stall	Metal	0.02	No
L-85	Second Floor, Men's Washroom 225: Wall Tile	Cream	0.05	No
L-86	Second Floor, Men's Washroom 225: Glazing on Brick Floor	Clear	0.07	No
L-87	Second Floor, Corridor 228: Wall	Pink	0.05	No
L-88	Second Floor, Data Entry Open Office 217: Wall	Light Blue	0.02	No
L-89	Second Floor, Training Room 220: Door	Blue	0.13	No
L-90	Second Floor, Office 247: Door	Blue	0.9	No
L-91	Second Floor, Janitor Room 252: Door	Blue	0.02	No
L-92	Second Floor: Wall	Tan	0.02	No
L-93	Second Floor, Telephone Room 241: Door	Blue	0.06	No
<b>L-94</b>	<b>Second Floor, Storage 243: Ceramic Wall Tile</b>	<b>Painted Beige</b>	<b>13.8</b>	<b>Yes</b>
L-95	Second Floor, Storage 243: Floor Tile	Grey	0.03	No
L-96	Second Floor, Corridor 240: Wall	Light Blue	0.18	No
L-97	Third Floor, Lobby 300: Door	Blue	0.07	No

<b>Sample</b>	<b>Location <sup>(1)</sup></b>	<b>Colour</b>	<b>Results (mg/cm<sup>2</sup>) <sup>(2)</sup></b>	<b>Lead-Based Paint <sup>(3)</sup> (Yes/No)</b>
L-98	Third Floor, Lobby 300: Wall	White	0.02	No
L-99	Third Floor, Office 303: Wall	Light Blue	0.02	No
L-100	Third Floor, Meeting Room 316: Wall	Dark Blue	0.02	No
L-101	Third Floor, North West Open Office 302: Wall	Grey	0.02	No
L-102	Third Floor, Corridor 307: Door	Blue	0.27	No
L-103	Third Floor, Photo Lab 311: Wall	Black	0.02	No
L-104	Third Floor, Washroom in Lobby 300: Wall Tile	Cream	0.05	No
L-105	Third Floor, Washroom in Lobby 300: Floor Tile	Brown	0.02	No
L-106	Fourth Floor, Lobby 400: Door	Blue	0.02	No
L-107	Fourth Floor, Waiting Room 436: Wall	White	0.1	No
L-108	Fourth Floor, Waiting Room 436: Wall	Blue	0.02	No
L-109	Fourth Floor, Soft Room 437: Wall	Tan	0.02	No
L-110	Fourth Floor, Lounge 410: Wall	Purple	0.04	No
L-111	Fourth Floor, Janitor Closet 414: Door	Blue	0.02	No
L-112	Fourth Floor, Janitor Closet 414: Ceramic Wall Tile	White	0.15	No
L-113	Fourth Floor, Janitor Closet 414: 1"x1" Floor Tile	White	0.11	No
L-114	Fourth Floor, Lounge 421: Wall	Brown	0.02	No
L-115	Roof, Chilled Water Room 500: Concrete Floor	Grey	0.06	No
L-116	Roof, Chilled Water Room 500: Plaster Wall	White	0.06	No
L-117	Roof, Chilled Water Room 500: Railing	Blue	0.1	No
L-118	Roof, Chilled Water Room 500: Door	Beige	0.15	No
L-119	Roof, Chilled Water Room 500: Door	Blue	0.08	No
L-120	North East Stairwell: Door to Roof	White	0.02	No

Sample	Location <sup>(1)</sup>	Colour	Results (mg/cm <sup>2</sup> ) <sup>(2)</sup>	Lead-Based Paint <sup>(3)</sup> (Yes/No)
L-121	Roof, Chilled Water Room 500: Fittings on Non-Insulated Chilled Water Pipes	Red	0.07	No
L-122	Roof, Chilled Water Room 500: Motors for Chilled Water System	Red	0.05	No
L-123	Roof, Chilled Water Room 500: Chilled Water Holding Vessel	Orange	0.03	No
L-124	North East Stairwell: Wall	White	0.03	No
L-125	North East Stairwell: Register	Blue	0.08	No
L-126	North East Stairwell: Railings	Blue	0.08	No
L-127	North East Stairwell: Doors	Blue	0.32	No
L-128	North East Stairwell: Concrete Floor	Grey	0.09	No
L-129	Roof, Machine Room 501: Floor	Blue	0.07	No
L-130	Roof, Machine Room 501: Wall	Green	0.08	No
L-131	Roof, Machine Room 501: Motor for Elevator	Blue	0.05	No
L-132	Roof, Machine Room 501: Door	Brown	0.28	No
L-149	Basement, Locker 047: Ceramic Floor Tile	Tan	0.03	No
<b>L-150</b>	<b>Basement, Locker 047: 3"x3" Ceramic Tiles</b>	<b>Green</b>	<b>2.8</b>	<b>Yes</b>
<b>L-151</b>	<b>Basement, Locker 047: 3"x3" Ceramic Tiles</b>	<b>Cream</b>	<b>2.8</b>	<b>Yes</b>
<b>L-152</b>	<b>Basement, Locker 047: 3"x3" Ceramic Tiles</b>	<b>Black</b>	<b>42.6</b>	<b>Yes</b>
L-153	Basement, Locker 046: Door	Blue	0.04	No
L-154	Basement, Locker 046: Door Frame	Cream	0.09	No
L-155	Basement, Locker 046: Wall	White	0.1	No
L-156	Basement, Locker 046: Locker	Blue	0.02	No
L-157	Basement, Locker 046: Locker	Cream	0.04	No
L-158	Basement, Storage 037: Door	White	0.02	No

<b>Sample</b>	<b>Location <sup>(1)</sup></b>	<b>Colour</b>	<b>Results (mg/cm<sup>2</sup>) <sup>(2)</sup></b>	<b>Lead-Based Paint <sup>(3)</sup> (Yes/No)</b>
L-159	Basement, Storage 037: Door	Blue	0.11	No
L-160	Basement, Storage 037: Wall	White	0.02	No
L-161	Basement, B.C. Tel 006: Door	Green	0.26	No
L-192	First Floor, Open Office 110: Door	Blue	0.02	No
L-193	First Floor, Open Office 110: Wall	White	0.02	No
L-194	First Floor, Open Office 110: Wall	Light Blue	0.02	No

**Notes:**

- (1) locations reference the room number reference drawings presented in Appendix I
- (2) milligrams per square centimetre
- (3) based on Hazardous Products Act and U.S. HUD classification of 1.0 mg/cm<sup>2</sup>
- (4) < - denotes less than the instrument's detection limit
- (5) bolded values indicate that the paint surface tested is considered lead paint according to the Hazardous Products Act and U.S. HUD classification.

Lead-based paint was identified on the following materials in the Subject Building:

- 3" x 3" Black Ceramic Tiles at the base of the wall in Washroom 061 of the basement;
- Yellow paint on non-insulated gas lines to the boiler in Mechanical Room 034 of the Basement;
- 3" x 3" Ceramic Wall Tiles painted cream in Storage 243 of the Second Floor;
- 3" x 3" Green Ceramic Wall Tiles in Lockers 047 and 046 of the Basement;
- 3" x 3" Cream Ceramic Wall Tiles in Lockers 047 and 046 of the Basement; and
- 3" x 3" Black Ceramic Wall Tiles in Lockers 047 and 046 of the Basement.

### **5.3 Polychlorinated Biphenyls (PCB)**

Fluorescent lamp ballasts were identified throughout the Subject Building. The lamp ballasts are presumed to contain PCBs.

### **5.4 Mercury**

Within the Subject Building, thermostats were noted to be non-mercury-containing.

Thermostats within the mechanical systems of the mechanical rooms (boiler room, chilled water room and fan rooms), are suspected to be mercury-containing.

Fluorescent light tubes throughout the Subject Building are presumed to contain mercury vapour.

## **5.5 Ozone-Depleting Substances (ODS)**

Within the Subject Building, the following equipment is presumed to be ODS-containing:

- Refrigerants contained within the Chilled Water Room 500 on th Roof;
- One (1) Pop Machine;
- Six (6) Refrigerators; and
- One (1) Water Cooler.

## **6.0 RECOMMENDATIONS**

### **6.1 Asbestos-Containing Materials**

Based on the inconsistent sample results for the drywall joint compound, EHS<sup>P</sup> recommends site-specific testing prior to the disturbance of any drywall joint compounds in the Subject Building.

If disturbed through renovations, identified ACMs should be abated in accordance with the requirements of WorkSafeBC, specifically but not limited to include those requirements prescribed through Parts 5.48-5.59 – Controlling Exposure, and Parts 6.1-6.32 – Asbestos.

EHS<sup>P</sup> recommends reference to WorkSafeBC publication “*Safe Handling of Asbestos, A Manual of Standard Practices*”. This document provides a guide to current practices that are to be followed in the Province of British Columbia, providing basic information on asbestos and asbestos products, health hazards and requirements for worker protection, safe work procedures and principles that should be followed in selecting the most suitable technique for the safe abatement of ACMs.

Asbestos-containing wastes should be managed in accordance with the British Columbia Ministry of Environment and should be transported in accordance with the requirements of the Federal Transportation of Dangerous Goods Act.

The work should be completed by qualified hazardous material workers. Throughout the abatement activities, appropriate air monitoring and inspection should be conducted by qualified personnel to ensure all contamination is contained and ACM are disposed of appropriately. It is recommended that a proper scope of work and asbestos removal specifications be written to ensure the complete and proper removal of all ACM.

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## **6.2 Lead-Based Paint**

The disturbance of identified LBPs should be controlled through use of safe work procedures. Work procedures should be developed in accordance with the requirements of WorkSafeBC, specifically but not limited to include those requirements prescribed through Parts 5.48-5.59 – Controlling Exposure, and Parts 6.59-6.69 – Lead.

Additionally, toxicity Characteristic Leaching Procedure (TCLP) testing should be performed on lead-containing waste that may be generated through work on lead-based paint, to facilitate the proper management of lead-containing wastes.

EHS<sup>P</sup> recommends reference WorkSafeBC publication entitled, “*Lead-Containing Paint and Coatings, Preventing Exposure in the Construction Industry*”, dated June 2011. This manual outlines basic information on lead and lead-containing products, health hazards requirements for worker protection, safe work procedures and principles that should be followed in selecting the most suitable technique for the safe abatement of lead contamination, providing a general guide to current practices that are to be followed in the Province of British Columbia.

## **6.3 Polychlorinated Biphenyls (PCB)**

When taken out of service, the PCB-content of each ballast should be verified through comparison to the criteria outlined in the Environment Canada Report EPS 2/CC/2 (revised) August 1991, “Identification of Lamp Ballasts Containing PCBs” to assess their likelihood of PCB content.

If identified to contain PCBs, the PCB-containing light ballasts should be removed in accordance with the requirements of WorkSafeBC. PCB-containing wastes should be managed in accordance with the requirements of the British Columbia Ministry of Environment and should be transported in accordance with the requirements of the Federal Transportation of Dangerous Goods Act.

For fixtures that are operational and are to be sold for reuse, documentation is required confirming that the purchasers understand the ballasts are PCB-containing, and the purchaser assumes all liability and responsibility associated with the fixtures.

## **6.4 Mercury**

Identified mercury-containing fixtures pose no risk to workers or occupants provided the mercury containers remain intact and undisturbed.



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When taken out of service, the mercury-containing equipment should be removed in accordance with the requirements of WorkSafeBC. Mercury-containing wastes should be managed in accordance with the requirements of the British Columbia Ministry of Environment and should be transported in accordance with the requirements of the Federal Transportation of Dangerous Goods Act.

## **6.5 Ozone-Depleting Substances**

When taken out of service, equipment identified to contain ODSs should be stored, transported and/or disposed of in accordance with the requirements of WorkSafeBC and the British Columbia Ministry of Environment, namely those requirement outlined in Ozone-Depleting Substances and Other Halocarbons Regulation including amendments up to B.C. Reg. 4/2010, January 14, 2010.

Additionally, wastes that contain ozone-depleting substances should be transported in accordance with the requirements of the Federal Transportation of Dangerous Goods Act.

### **\*\*\*\*\*CAUTIONARY NOTE\*\*\*\*\***

Only limited demolition was conducted during the assessment. Additional hazardous materials are likely present within ceiling, wall and/or floor cavities of the Subject Building. If any additional suspect hazardous materials are found during renovation and/or demolition activities, they should be positively identified, extracted and disposed of appropriately.

## **7.0 LIMITATIONS**

The conclusions and recommendations contained in this assessment report are based upon professional opinions with regard to the subject matter. These opinions are in accordance with currently accepted environmental assessment standards and practices applicable to these locations and are subject to the following inherent limitations:

1. The data and findings presented in this report are valid as of the dates of the investigations. The passage of time, manifestation of latent conditions or occurrence of future events may warrant further exploration at the property, analysis of the data, and re-evaluation of the findings, observations, and conclusions expressed in this report.
2. Because of the limitations stated above, the findings, observations and conclusions expressed by EHS<sup>P</sup> in this report are not, and should not be, considered an opinion concerning compliance of any past or present owner or operator of the site with any federal, provincial or local laws or regulations.

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3. No warranty or guarantee, whether expressed or implied, is made with respect to the data or the reported findings, observations, and conclusions, which are based solely upon site conditions in existence at the time of investigation.
  4. EHS<sup>P</sup> assessment reports present professional opinions and findings of a scientific and technical nature. While attempts were made to relate the data and findings to applicable environmental laws and regulations, the report shall not be construed to offer legal opinion or representations as to the requirements of, nor compliance with, environmental laws, rules, regulations or policies of federal, provincial, or local governmental agencies. Any use of the assessment report constitutes acceptance of the limits of EHS<sup>P</sup>'s liability. EHS<sup>P</sup>'s liability extends only to its client and not to other parties who may obtain this assessment report. Issues raised by the report should be reviewed by appropriate legal counsel.

## **8.0 CLOSURE**

We trust the information presented in this report meets your requirements. If you have any questions please feel free to contact the undersigned at 604.763.1642. Thank you for the opportunity to be of service.

### **EHS PARTNERSHIPS LTD.**

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