



REPORT

Designated Substances and Hazardous Materials Survey

*DCC Project No. HQ1562DC, 52 North Star Drive, CFB Trenton, ON
Building 52 - Hanger 10*

Submitted to:

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Executive Summary

Golder Associates Ltd. (Golder) was retained by Defence Construction Canada (DCC) to provide an intrusive Designated Substances / Hazardous Materials (DS/HM) survey prior to the eventual demolition of existing structures comprising Building 52 – Hanger 10 (DCC project No. HQ1562DC) located at 52 North Star Drive, CFB Trenton, Ontario (the Site).

At the request of DCC the focus of the DS/HM survey was the eleven designated substances, as defined in Ontario Regulation 490/09: *Designated Substances* (O. Reg. 490/09) made under the Ontario *Occupational Health and Safety Act*, R.S.O. 1990 Chapter O.1, as amended (OHSA). Substances surveyed included acrylonitrile, arsenic, asbestos, benzene, coke oven emissions, ethylene oxide, isocyanates, lead, mercury, silica and vinyl chloride. Other hazardous materials, limited to ozone-depleting substances (ODSs) and polychlorinated biphenyls (PCBs) were also requested to be included in the assessment.

The DS/HM survey was conducted by Mr. Gregory Katsuno, Ms. Alanna Brunskill, and Mr. Tim Seabert of Golder, between 9 and 12 February 2021 and between 22 and 24 March 2021. The DS/HM survey was conducted under the direction of Mr. Tim Seabert, Source List Manager, and Mr. Greg Slack, Certified Industrial Hygienist, at Golder.

The intrusive DS/HM survey was conducted to supplement historic sampling conducted at the Site by others. A desktop review of the provided historic baseline DS/HM survey reports was performed in advance of the Site assessment. While on-Site, historic report findings were validated in conjunction with bulk material sampling of materials previously unaccounted for. The results were included within this DS/HM survey report. Materials not previously reported are described below.

The Executive Summary highlights key points from the report only. For complete information and findings, as well as the limitations, the reader must examine the complete report.

Designated Substances

Asbestos-Containing Materials

A total of 89 samples of suspect asbestos-containing materials (ACMs) were collected by Golder from the Site and submitted for asbestos content analysis representing 27 homogeneous materials, including: Transite panels, various caulking materials, putty, vinyl floor tiles, mastics, parging, firestop, papers, and mortar. Based on the results, the following materials are ACMs:

- **Corrugated Exterior Transite Panels (sample A-030) installed as exterior siding on rooftop as well as north and south facades of the Site containing 15% chrysotile.**
- **Flat Transite Panels (sample A-033) installed as siding on the select walls of Hanger Bays 1 through 6 and in fan rooms containing 22% chrysotile.**
- **Grey caulking (sample A-035) applied to select joints in north and south Hanger Bay perimeter walls containing 3% chrysotile.**
- **Grey construction putty (sample A-041) applied above perforated ceiling tiles in corridor spaces and washroom locations throughout the second floor of the Site containing 6% chrysotile.**
- **Black tar paper layer (sample A-042) installed in perimeter building envelope behind corrugated Transite panels containing 2% chrysotile.**

The confirmed ACMs may exist in other areas of the Site. During the DS/HM survey, Golder observed the presence of cast iron bell and spigot joints on piping installed throughout the Site. Packing material found in such joints is suspected to be asbestos-containing but was not sampled during the assessment as to not compromise the integrity of drains and piping actively in use at the time of the DS/HM survey. This packing material, in addition to materials found to be in likeness to confirmed ACMs must be assumed to be ACMs unless otherwise confirmed by laboratory analyses.

Based on observations made during the DS/HM survey, Golder confirmed that the locations and quantities of sampled and confirmed ACMs at the Site, as previously reported by OESN (2009) and Wood (2018), remain largely accurate as of the time of Golder's assessment.

Arsenic-, Lead-, or Mercury-Containing Materials

A total of 11 varieties of paints or ceramic glazing were collected from the Site by Golder and submitted for lead content analysis. Based on the analytical results the following sampled paints were determined to have concentrations above the classification criteria of 50 micrograms per gram ($\mu\text{g/g}$) of arsenic, 90 $\mu\text{g/g}$ of lead, and/or 10 $\mu\text{g/g}$ of mercury, and therefore, are considered to be lead-, and/or a combination of lead-, arsenic-, mercury-containing:

- **Orange-red paint (sample L-003) present on interior fire safety highlights throughout the Site containing lead at 37,800 parts per million (ppm).**
- **Yellow trim ceramic tile glazing (sample L-004) present on upper edge of north and south perimeter cinderblock walls of hangers containing lead at 94 ppm.**
- **Grey-beige paint (sample L-008) present on walls of select second floor offices containing lead at 466 ppm.**

Based on observations made during the DS/HM survey, Golder confirmed that the locations and quantities of sampled and confirmed lead- or combination of lead-, arsenic-, and mercury-containing materials at the Site, as previously reported by OESN (2009) and Wood (2018), remain largely accurate as of the time of Golder's assessment. However, during desktop review of the historical reports, Golder noted that the LCMs, as reported in the OESN (2009) report, were determined based on a classification criterion of 5,000 $\mu\text{g/g}$ for lead content. Golder has re-classified historically sampled and analyzed suspected LCMs from historical reports based on application of the Government of Canada's *Surface Coating Materials Regulations* (SOR/2016-193), made under the *Canada Consumer Product Safety Act*, of 90 $\mu\text{g/g}$ for lead content.

Please note, the confirmed lead-containing materials may exist in other areas of the Site. If paints or ceramic tile glazes are discovered that are not described within this report, they must be assumed to be lead- or combination of lead-, arsenic-, and mercury-containing materials unless otherwise confirmed by laboratory analyses. Lead may also be present in solder on pipe joints at the Site. During the DS/HM survey, Golder observed the presence of cast iron bell and spigot joints on piping installed throughout the Site. Packing material found in such joints is suspected to be lead-containing but was not sampled during the assessment as to not compromise the integrity of drains and piping actively in use at the time of the DS/HM survey. This packing material, in addition to applications of lead sheeting, solder, cable wrapping, batteries, flashing or brick ties that are discovered during renovation, repair, construction or demolition activities conducted at the Site, should also be treated as LCMs until tested and proven otherwise.

Toxicity Characteristic Leaching Procedure

A total of 11 materials with paint applications were identified by Golder and sampled at the Site, which are understood to require removal and disposal during the demolition activities and therefore, would require waste characterization. Based on laboratory results, three (3) of the 11 materials were confirmed to be lead-containing. These materials, including the painted surface and the underlying substrate, were submitted for TCLP analysis for lead leachate.

Laboratory analysis indicated that the three (3) sampled materials were below the maximum allowable concentration of leachate for lead, as prescribed by Ontario Regulation 347: *General – Waste Management* made under the Ontario *Environmental Protection Act*, R.S.O. 1990, c. E. 19, as amended. Therefore, these materials are classified as non-hazardous construction waste and can be disposed in local licensed landfills.

Based on a review of historical reports, laboratory analysis indicated that the leachate concentration of lead from the paint and associated substrate of the following materials to be above the maximum allowable concentration of 5 mg/L, as described by the Schedule 4, O. Reg. 347/90:

- **Pink paint (sample L1, Wood 2018) on exterior rooftop metal strut support beams for Building 52, producing lead leachate at 34.5 milligrams per liter (mg/L).**

Disposal of confirmed hazardous waste, producing lead leachate must be conducted in accordance with O. Reg. 347/90.

Mercury-Containing Materials

In addition to paints and ceramic glazing, the fluorescent light tubes/bulbs observed to be present throughout the Site are suspected to contain mercury vapour. Mercury-containing thermostats were observed in various locations throughout the Site and were observed to be consistent with locations indicated in historic reports (OESN 2009). Elemental mercury may be present in switches and electrical switchgears.

Disposal of materials containing mercury shall be performed in accordance with Schedule 4, O. Reg. 347/90.

Silica-Containing Materials

Suspected silica-containing materials were not physically sampled during the assessment as it would have caused damage to the Site and it is not standard practice to do so. Silica is presumed to be present in the ceiling tiles, concrete, stippled/texture finishes, drywall joint compounds, mortars, and other masonry and aggregate products used to construct the Site. Silica-containing materials were observed to be in generally good condition at the time of the assessment.

Activities that may cause disturbance to silica-containing materials must be conducted in accordance the regulations and guidelines described in this report. If these measures and procedures are followed, worker exposure is not expected to be greater than occupational exposure limits for silica.

Other Designated Substances

No other designated substances, as defined in O. Reg. 490/09 under the OHSA, were observed within the Site. If any additional materials are identified and are expected to be impacted by the project that are not otherwise mentioned within this report, Golder should be contacted to provide further evaluation.

Hazardous Materials

Ozone-Depleting Substances

ODS-containing equipment such as refrigerators, water coolers, air conditioner and HVAC units were observed within the kitchens or other spaces throughout the Site, which may contain ODSs such as R-12 refrigerant, a Class 1 ODS as defined by Ontario Regulation 463/10: *Ozone Depleting Substance and Other Halocarbons* (O. Reg. 463/10) made under the Ontario *Environmental Protection Act*. In addition, the chiller systems present in select mechanical spaces may contain ODSs, but Golder was unable to directly observe to confirm. Prior to future renovation/demolition activities, any ODS-containing units should be removed and drained by a licensed technician before the equipment is decommissioned and up-to-date records should be kept detailing the transfer quantities by refrigerant types and given to the owner for their records. Maintenance, transfer and disposal of refrigerants must be conducted in accordance with the O. Reg. 463/10.

Polychlorinated Biphenyls

Fluorescent lighting system ballasts as well as electrical transformers at the Site may be PCB-containing. Due to health and safety concerns associated with energized fluorescent lighting systems, connected and energized fluorescent lights were not breached or accessed during the DS/HM survey. As Golder did not evaluate the fluorescent light tube ballasts due to safety concerns regarding energized equipment, it is recommended that ballast information be collected by others when the systems are de-energized to determine if PCBs may be present prior to demolition unless DCC can confirm that all PCB-containing equipment has been removed from the Site.

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1.0 INTRODUCTION

Golder Associates Ltd. (Golder) was retained by Defence Construction Canada (DCC) to provide an intrusive Designated Substances / Hazardous Materials (DS/HM) survey prior to the eventual demolition of existing structures comprising Building 52 – Hanger 10 (DCC project No. HQ1562DC) located at 52 North Star Drive, CFB Trenton, Ontario (the Site).

At the request of DCC, the focus of the DS/HM survey was the eleven designated substances, as defined in Ontario Regulation 490/09: *Designated Substances* (O. Reg. 490/09) made under the Ontario *Occupational Health and Safety Act*, R.S.O. 1990 Chapter O.1, as amended (OHSA). Substances surveyed included acrylonitrile, arsenic, asbestos, benzene, coke oven emissions, ethylene oxide, isocyanates, lead, mercury, silica and vinyl chloride. Other hazardous materials, limited to ozone-depleting substances (ODSs) and polychlorinated biphenyls (PCBs) were also requested to be included in the assessment.

The DS/HM survey was conducted by Mr. Gregory Katsuno, Ms. Alanna Brunskill, and Mr. Tim Seabert of Golder, between 9 and 12 February 2021 and between 22 and 24 March 2021. The DS/HM survey was conducted under the direction of Mr. Tim Seabert, Source List Manager, and Mr. Greg Slack, Certified Industrial Hygienist, at Golder.

2.0 PROJECT BACKGROUND

Prior to the intrusive DS/HM survey, Golder reviewed the following historic baseline DS/HM survey reports, which were provided as part of the Request for Proposal (RFP):

- “*Designated Substances and Hazardous Materials Survey Within the Building 52 – 52 North Star Drive Hanger 10 CFB 8 Wing Trenton*”, prepared by Ontario Environmental Safety Network Ltd., January 14, 2009, Project No. 1310-2836-OOHM-19 (OESN 2009).
- “*Targeted Pre-Renovation Designated Substance and Hazardous Materials Survey CFB Trenton Building B052 Hanger 10 Roof 8 Wing Astra, Ontario*”, prepared by Wood Environment & Infrastructure Solutions, November 5, 2018. Project No. SWC169197 Rev.4 (Wood 2018).

Based on the review, previously identified, sampled, and confirmed asbestos-containing materials (ACMs) are suspected to be present within the Site and have been summarized within Table C.3 included in Appendix C.

Other designated substances identified and referenced in historic baseline DS/HM surveys included, select lead-, arsenic-, and lead-containing finishing materials throughout the Site, suspected mercury-containing light tubes, and suspected silica-containing building materials such as concrete, masonry, mortar, other aggregates, ceiling tiles and drywall. The purpose of Golder’s DS/HM survey was to validate information provided in the historic reports while concurrently performing bulk material sampling in order to sufficiently investigate information gaps previously identified during review of the historic reports. Previously sampled and confirmed lead-, arsenic-, and / or lead-containing finishing materials suspected to be present within the Site and have been summarized within Table C.5 included in Appendix C. The results of toxicity characteristic leaching procedure (TCLP) analyses performed on said materials have been summarized within Table C.7 included in Appendix C. The historical reports provided by DCC have been included in Appendix F.

3.0 SCOPE OF WORK

The scope of work for the DS/HM survey was performed to meet the requirements of the RFP and thus limited to the following:

- Developing and submitting one (1) electronic (PDF) Site-specific Health and Safety Plan (HASP) for the project per the SOW for compliance with applicable health and safety legislations and with applicable DND health and safety policies and procedures, as required.
- Completing a thorough desktop review of the available existing historical reports provided by DCC regarding previous DS/HM surveys conducted at the Site.
- Conducting a comprehensive on-site DS/HM survey at the Site of building materials to be disturbed as part of the demolition project. Visually identifying and inventorying suspected designated substances and infrastructure-related hazardous materials per the SOW.
- Collecting additional representative bulk building material samples for asbestos and arsenic/lead/mercury content analysis, as required, based on the DS/HM survey.
- Conducting an additional Site visit with the assistance of an abatement contractor for destructive exploratory assessments along with repairs.

Preparing one (1) digital (PDF) Draft and one (1) digital (PDF) Final DS/HM Report. The DS/HM survey was limited to assessment of the Building 52 – Hanger 10 and its associated structures. Floor plans for the Site were provided by DCC during the RFP or prior to the DS/HM survey and illustrated by the Figures included as Appendix E in this report.

The DS/HM survey did not include the roof, inaccessible shafts or pipe risers, confined spaces, electrical equipment or any other areas outside of the areas identified above. Golder made use of existing access hatches and viewed above drop ceilings, where ceiling tiles could be moved temporarily and put back.

4.0 REGULATIONS AND GUIDELINES

The Site is a federally regulated workplace and therefore worker exposure to chemical agents is regulated under the *Canada Occupational Health and Safety Regulations*, SOR/86-304 (COHSR), Part X – Hazardous Substances, made under the *Canada Labour Code, Part II* (CLC-II). In addition, the general duty clause of CLC-II requires employers to ensure that the health and safety of their employees is protected. Neither DS/HM are defined under federal regulations, but they have been included here to meet the project requirements.

It is noted that the CLC-II was amended in 2017, which resulted in occupational health and safety regulation changes regarding to asbestos. ACMs must be treated in accordance with *COHSR SOR/86-304*. At the request of DCC, the asbestos sampling requirements were to meet the Ontario Regulation 278/05: *Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations*, as amended (O. Reg. 278/05), made under OHSA. Section 30 of the OHSA requires that, prior to beginning a construction project (including building renovation or demolition); a document summarizing the presence of designated substances must be available to contractors and subcontractors. This report serves that purpose.

Further detail and a summary of applicable regulations and guidelines are included in Appendix A.

5.0 METHODOLOGY

Many of the materials and information related to the DS/HM survey were previously collected by others (OESN 2009 and Wood 2018). Golder reviewed the previous findings and conducted sampling of suspect materials not previously sampled or where the previous outcome could not be verified. Golder conducted the DS/HM survey as described below:

- Where present, Golder utilized existing openings through wall and ceiling access hatches to view behind or above existing finishes.
- Golder viewed above a representative number of ceiling tiles, where accessible, to assess the ceiling space within the Site. Golder made effort to view the ceiling deck, mechanical ducts and insulation, the top of columns, firestop and other materials. Not all ceiling tiles could be moved and not all ceiling spaces could be fully observed due to mechanical and electrical services located above the tiles.
- Golder did not sample drywall joint compound, as it had been previously sampled by others and historically delineated.
- Suspected ACMs and LCMs were sampled at discrete sample locations and documented on the Site Figures included in this report.
- Golder did not perform a visual assessment of rooftop building materials and finishes, as rooftop portions of the Site had already been characterized as part of the historic report prepared by Wood (2018).

All Site work was conducted in accordance with standards outlined in the OHSA and Golder's Site-specific Health and Safety Plan without incident.

Further detail of sampling methodologies and assessment are included as Appendix B.

6.0 RESULTS

6.1 Asbestos-Containing Materials

A total of 89 samples of suspect ACMs were collected from the Site and submitted for asbestos content analysis representing 27 homogeneous materials: including Transite, various caulking materials, putty, vinyl floor tiles, mastics, parging, firestop, papers, and mortars. Based on the results and the historic sample data, the following materials are ACMs:

- **Corrugated Exterior Transite Panels (sample A-030) installed as exterior siding on rooftop as well as north and south facades of the Site containing 15% chrysotile.**
- **Flat Transite Panels (sample A-033) installed as siding on the select walls of Hanger Bays 1 through 6 and in fan rooms containing 22% chrysotile.**
- **Grey caulking (sample A-035) applied to select joints in north and south Hanger Bay perimeter walls containing 3% chrysotile.**
- **Grey construction putty (sample A-041) applied above perforated ceiling tiles in corridor spaces and washroom locations throughout the second floor of the Site containing 6% chrysotile.**
- **Black tar paper layer (sample A-042) installed in perimeter building envelope behind corrugated Transite panels containing 2% chrysotile.**

Analytical laboratory results of all suspected ACM samples collected are summarized within the Spreadsheet of Findings – Appendix C (Table C.2) and Laboratory Test Reports are included within Appendix D. Sample locations are identified on Figures found in Appendix E. Results of historically identified ACMs are summarized and within Table C.3 included in Appendix C. The confirmed ACMs may exist in other areas of the Site. During the DS/HM survey, Golder observed the presence of cast iron bell and spigot joints on piping installed throughout the Site. Packing material found in such joints is suspected to be asbestos-containing but was not sampled during the assessment as to not compromise the integrity of drains and piping actively in use at the time of the DS/HM survey. This packing material, in addition to materials found to be in likeness to confirmed ACMs must be assumed to be ACMs unless otherwise confirmed by laboratory analyses.

Based on observations made during the DS/HM survey, Golder confirmed that the locations and quantities of sampled and confirmed ACMs at the Site, as previously reported by OESN (2009) and Wood (2018), remain largely accurate as of the time of Golder's assessment.

6.2 Arsenic-, Lead-, or Mercury-Containing Materials

A total of 11 varieties of paints or ceramic glazing were collected from the Site and submitted for lead content analysis. Based on the analytical results the following sampled paints were determined to have concentrations above the classification criteria of 50 µg/g of arsenic, 90 µg/g of lead, and/or 10 µg/g of mercury, and therefore, are considered to be lead-, and/or a combination of lead-, arsenic-, mercury-containing:

- **Orange-red paint (sample L-003) present on interior fire safety highlights throughout the Site containing lead at 37,800 parts per million (ppm).**
- **Yellow trim ceramic tile glazing (sample L-004) present on upper edge of north and south perimeter cinderblock walls of hangers containing lead at 94 ppm.**
- **Grey-beige paint (sample L-008) present on walls of select second floor offices containing lead at 466 ppm.**

The analytical laboratory results of the paint and ceramic glazing materials samples are summarized within the Spreadsheet of Findings – Appendix C (Table C.4) and analytical laboratory results of historically identified lead- or combination of lead-, arsenic-, and mercury-containing materials are summarized and included in Table C.5 included in Appendix C. the Laboratory Test Reports are included within Appendix D and sample locations are identified on Figures found in Appendix E.

Based on observations made during the DS/HM survey, Golder confirmed that the locations and quantities of sampled and confirmed lead- or combination of lead-, arsenic-, and mercury-containing materials at the Site, as previously reported by OESN (2009) and Wood (2018), remain largely accurate as of the time of Golder's assessment. However, during desktop review of the historical reports, Golder noted that the LCMs, as reported in the OESN (2009) report, were determined based on a classification criterion of 5,000 µg/g for lead content. Golder has re-classified historically sampled and analyzed suspected LCMs from historical reports based on the Government of Canada's *Surface Coating Materials Regulations* (SOR/2016-193), made under the *Canada Consumer Product Safety Act*, of 90 µg/g for lead content.

Please note, the confirmed lead-containing materials may exist in other areas of the Site. If paints or ceramic tile glazes are discovered that are not described within this report, they must be assumed to be lead- or combination of lead-, arsenic-, and mercury-containing materials unless otherwise confirmed by laboratory analyses. Lead may also be present in solder on pipe joints at the Site. During the DS/HM survey, Golder observed the presence of cast iron bell and spigot joints on piping installed throughout the Site. Packing material found in such joints is

suspected to be lead-containing but was not sampled during the assessment so as to not compromise the integrity of drains and piping actively in use at the time of the DS/HM survey. This packing material, in addition to applications of lead sheeting, solder, cable wrapping, batteries, flashing or brick ties that are discovered during renovation, repair, construction or demolition activities conducted at the Site, should also be treated as LCMs until tested and proven otherwise.

6.3 Toxicity Characteristic Leaching Procedure

A total of 11 materials with paint applications were identified by Golder and sampled at the Site, which are understood to require removal and disposal during the demolition activities and therefore, would require waste characterization. Based on laboratory results, three (3) of the 11 materials were confirmed to be lead-containing. These materials, including the painted surface and the underlying substrate, were submitted for TCLP analysis for lead leachate.

Laboratory analysis indicated that the three (3) sampled materials were below the maximum allowable concentration of leachate for lead, as prescribed by Ontario Regulation 347: *General – Waste Management* made under the *Environmental Protection Act*, R.S.O. 1990 (O. Reg. 347/90), as amended. Therefore, these materials are classified as non-hazardous construction waste and can be disposed in local licensed landfills.

Based on a review of historical reports, laboratory analysis indicated that the leachate concentration of lead from the paint and associated substrate of the following materials to be above the maximum allowable concentration of 5 mg/L, and is thus classified as leachate toxic waste, as described by the Schedule 4, O. Reg. 347/90:

- **Pink paint (sample L1, Wood 2018) on exterior rooftop metal strut support beams for Building 52, producing lead leachate at 34.5 milligrams per liter (mg/L).**

During review of historical reports, it was noted that OESN did not perform TCLP analyses on the paint samples collected from the Site as part of their 2009 DS/HM survey. Substrate associated with identified LCMs must be presumed to be hazardous waste unless otherwise analyzed and confirmed via TCLP analysis for classification as non-hazardous waste. Disposal of presumed or confirmed hazardous waste, producing lead leachate must be conducted in accordance with O. Reg. 347/90.

Please refer to Appendix C: Spreadsheet of Findings, Table C.6, for further details regarding the material samples collected for TCLP analysis. Please refer to Appendix C: Spreadsheet of Findings, Table C.7, for further details regarding the historical report material samples collected for TCLP analysis. The analytical laboratory reports are included within Appendix D and approximate sample locations are illustrated on figures within Appendix E.

6.4 Mercury-Containing Materials

In addition to paints and ceramic glazing, the fluorescent light tubes/bulbs observed to be present throughout the Site are suspected to contain mercury vapour. Mercury-containing thermostats were observed in various locations throughout the Site and were observed to be consistent with locations indicated in historic reports (OESN 2009). Elemental mercury may be present in switches and electrical switchgears. Please refer to Table C.8, for further details regarding observed mercury-containing materials.

6.5 Silica-Containing Materials

Suspected silica-containing materials were not physically sampled during the assessment as it would have caused damage to the Site and it is not standard practice to do so. Silica is presumed to be present in the ceiling tiles, concrete, stippled/texture finish, drywall joint compounds, mortars, and other masonry and aggregate products used to construct the Site. Silica-containing materials were observed to be in generally good condition at the time of the assessment.

6.6 Other Designated Substances

No other designated substances, as defined in O. Reg. 490/09 under the OHSA, were observed within the areas at the Site.

6.7 Other Hazardous Materials

6.7.1 Ozone-Depleting Substances

An assessment for potential ODS-containing equipment within the Site was completed as part of the DS/HM survey. ODS-containing equipment such as refrigerators, water coolers, air conditioner and HVAC units were observed within the kitchens or other spaces throughout the Site, which may contain ODSs such as R-12 refrigerant, a Class 1 ODS as defined by Ontario Regulation 163/10: *Ozone Depleting Substances and Other Halocarbons* (O. Reg. 463/10), made under the Ontario *Environmental Protection Act*. In addition, the chiller systems present in select mechanical spaces may contain ODSs but Golder was unable to directly observe to confirm. Please refer to Table C.9, for further details regarding observed ODSs.

6.7.2 Polychlorinated Biphenyls

Fluorescent lighting system ballasts as well as electrical transformers at the Site may be PCB-containing. Due to health and safety concerns associated with energized fluorescent lighting systems, connected and energized fluorescent lights were not breached or accessed during the DS/HM survey. Please refer to Table C.10, for further details regarding observed fluorescent lighting ballasts.

7.0 RECOMMENDATIONS

7.1 Asbestos-Containing Materials

This report was prepared to fulfil the requirements of SOR/86-304, and the Duty of the project owner's requirement under Section 30(1) of the OHSA, and the requirements of Section 10 of O. Reg. 278/05. This report must be provided to contractors prior to conducting demolition or renovation work at the Site. However, this report does not include the additional requirement for project specifications and drawings outlining abatement areas and specific procedures typically required in a demolition tender contract.

Based on the results of the DS/HM survey, the following recommendations are made with respect to ACMs known to be present at the Site:

- ACMs must be removed prior to any renovation and/or demolition activities that would disturb these materials. ACMs must be removed in accordance with SOR/86-304 and O. Reg. 278/05, prior to any disturbance caused by the re-development, renovation or demolition processes. ACMs must be disposed of in accordance with SOR/86-304, O. Reg. 278/05 and Schedule 4, O. Reg. 347/90.
- The following Table 1 outlines the recommended removal procedures for the remediation of ACMs identified or presumed at the Site, to meet the requirements of SOR/86-304 and O. Reg. 278/05.

Table 1: Asbestos Remediation Recommendations for Identified ACMs at the Site

Material Description / Location	Friable or Non-Friable	Observed Estimated Quantity to be Impacted	Asbestos Type and Percentage	Comments	Recommendations
Corrugated Transite panels – present installed as exterior wall finish	Non-Friable	~3,750 m ²	15% Chrysotile	N/A	
Flat Transite panels – present installed on sections of north and south hanger walls and exterior finish	Non-Friable	~4,750 m ²	22% Chrysotile	N/A	If removing/disturbing less than one square meter of less of this material it must be completed in accordance with Type 1 / Low-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications. If removing/disturbing one square meter or more of this material it must be completed in accordance with Type 1 / Low-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, project specifications.
Grey caulking – present on select joints in interior Transite panels in hangar area	Non-Friable	~65 linear metres	3% Chrysotile	N/A	

Material Description / Location	Friable or Non-Friable	Observed Estimated Quantity to be Impacted	Asbestos Type and Percentage	Comments	Recommendations
Grey construction putty– present applied to perimeter wall construction joints above perforated ceiling tiles installed in second floor corridor and washroom spaces	Non-Friable	~800 linear metres	6% Chrysotile	Observable in select areas above ceiling tiles but largely concealed; quantity based on extrapolation of observed application patterns	If removing/disturbing this material is done by means of non-powered hand tools it must be completed in accordance with Type 1 / Low-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications. If repair/removal/disturbance is done by means of power tools that are attached to dust-collecting devices equipped with HEPA filtered exhausts, it must be completed in accordance with Type 2 / Moderate-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications.
Cast iron Bell and Spigot Joint packing material – Present installed throughout the Site	Non-Friable	~350 units observed	Material not sampled; presumed asbestos-containing	N/A	
Black tar paper layer	Friable	~3,750 m ²	2% Chrysotile	Observable in select areas of perimeter exterior building envelope and largely concealed; quantity based on extrapolation of observed application patterns	If removing/disturbing of one square meter or less of this material, it must be completed in accordance with Type 2 / Moderate-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum and project specifications. If removing/disturbing more than one square meter this material, it must be completed in accordance with Type 3 / High-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications.

Material Description / Location	Friable or Non-Friable	Observed Estimated Quantity to be Impacted	Asbestos Type and Percentage	Comments	Recommendations
Previously Sampled and Confirmed ACMs Presented in Historic Reports					
Brown Roofing Shingle Material	Non-Friable	~16,815 m ²	7% Chrysotile	N/A	If removing/disturbing this material is done by means of non-powered hand tools it must be completed in accordance with Type 1 / Low-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications. If repair/removal/disturbance is done by means of power tools that are attached to dust-collecting devices equipped with HEPA filtered exhausts, it must be completed in accordance with Type 2 / Moderate-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications.
Rooftop Exterior Transite Panels	Non-Friable	~1,175 m ²	40% Amosite	N/A	
12" x 12" Salmon with White Streaks Floor Tile	Non-Friable	~250 m ²	2% Chrysotile	N/A	
9" x 9" Green with White Streaks Floor Tile	Non-Friable	~110 m ²	2% Chrysotile	N/A	
9" x 9" Grey Floor Tile	Non-Friable	~15 m ²	2% Chrysotile	N/A	
Mastic (associated with 12" x 12" White with Black Speckled Floor Tile)	Non-Friable	~30 m ²	2% Chrysotile	N/A	
Mastic (associated with 12" x 12" Solid Grey Floor Tile)	Non-Friable	~75 m ²	2% Chrysotile	N/A	
Black Mastic (associated with 12" x 12" Beige with Black Streaks Floor Tile)	Non-Friable	~145 m ²	3% Chrysotile	N/A	

Material Description / Location	Friable or Non-Friable	Observed Estimated Quantity to be Impacted	Asbestos Type and Percentage	Comments	Recommendations
9" x 9" White with Black Streaks Floor Tile	Non-Friable	~920 m ²	5% Chrysotile	N/A	If removing/disturbing this material is done by means of non-powered hand tools it must be completed in accordance with Type 1 / Low-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications. If repair/removal/disturbance is done by means of power tools that are attached to dust-collecting devices equipped with HEPA filtered exhausts, it must be completed in accordance with Type 2 / Moderate-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications.
Black Mastic (associated with 9" x 9" White with Black Streaks Floor Tile)	Non-Friable	~920 m ²	5% Chrysotile	N/A	
9" x 9" Olive Green with White Streaks Floor Tile	Non-Friable	~650 m ²	3% Chrysotile	N/A	
Black Mastic (associated with 9" x 9" Olive Green with White Streaks Floor Tile)	Non-Friable	~650 m ²	5% Chrysotile	N/A	
12" x 12" Chocolate Brown with White Streaks Floor Tile	Non-Friable	~30 m ²	2% Chrysotile	N/A	
Black Mastic (associated with 9" x 9" Off-Beige with Light Streaks Floor Tile)	Non-Friable	~2 m ²	2% Chrysotile	N/A	

Material Description / Location	Friable or Non-Friable	Observed Estimated Quantity to be Impacted	Asbestos Type and Percentage	Comments	Recommendations
9" x 9" Dark Grey with Black and White Streaks Floor Tile	Non-Friable	~6.5 m ²	3% Chrysotile	N/A	If removing/disturbing one square meter or less of this material, and if Glove Bag operations are not performed, it must be completed in accordance with Type 2 / Moderate-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications. Type 2 / Moderate-risk activity asbestos Glove Bag operations may be performed when removing/disturbing this material as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, and project specifications.
Black Mastic (associated with 9" x 9" Dark Grey with Black and White Streaks Floor Tile)	Non-Friable	~6.5 m ²	2% Chrysotile	N/A	If removing/disturbing this material is done by means of non-powered hand tools it must be completed in accordance with Type 1 / Low-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications.
Black Mastic (associated with 12" x 12" White with Grey Flecks Floor Tile)	Non-friable	~55 m ²	2% Chrysotile	N/A	If repair/removal/disturbance is done by means of power tools that are attached to dust-collecting devices equipped with HEPA filtered exhausts, it must be completed in accordance with Type 2 / Moderate-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications.
Black Mastic (associated with 12" x 12" Blue, Rose, Beige Army Pattern Floor Tile)	Non-friable	~235 m ²	3% Chrysotile	N/A	If repair/removal/disturbance is done by means of power tools that are attached to dust-collecting devices equipped with HEPA filtered exhausts, it must be completed in accordance with Type 2 / Moderate-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications.

Material Description / Location	Friable or Non-Friable	Observed Estimated Quantity to be Impacted	Asbestos Type and Percentage	Comments	Recommendations
Black Mastic (associated with 12" x 12" White with Bright Blue Flecks Floor Tile)	Non-Friable	~20 m ²	2% Chrysotile	N/A	If removing/disturbing this material is done by means of non-powered hand tools it must be completed in accordance with Type 1 / Low-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications. If repair/removal/disturbance is done by means of power tools that are attached to dust-collecting devices equipped with HEPA filtered exhausts, it must be completed in accordance with Type 2 / Moderate-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications.
Black Mastic (associated with 12" x 12" Rose with Brown Flecks Floor Tile)	Non-Friable	~2 m ²	2% Chrysotile	N/A	
Black Mastic (associated with Rubber Flooring in second floor corridor)	Non-Friable	~2,250 m ²	5% Chrysotile	N/A	
Black/Yellow Mastic	Non-Friable	~100 m ²	5% Chrysotile	N/A	
12" x 12" Mustard Yellow with White Streaks Floor Tile	Non-Friable	~55 m ²	2% Chrysotile	N/A	
White Floor Tile (Concealed under 12" x 12" Navy Blue with White Streaks Floor Tile)	Non-Friable	~125 m ²	5% Chrysotile	N/A	

Material Description / Location	Friable or Non-Friable	Observed Estimated Quantity to be Impacted	Asbestos Type and Percentage	Comments	Recommendations
Black Mastic (associated with concealed White Floor Tiles under 12" x 12" Navy Blue with White Streaks Floor Tile)	Non-Friable	~125 m ²	5% Chrysotile	N/A	If removing/disturbing this material is done by means of non-powered hand tools it must be completed in accordance with Type 1 / Low-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications.
Drywall and Joint Compound	Non-Friable	~2,840 m ²	2% Chrysotile	N/A	If repair/removal/disturbance is done by means of power tools that are attached to dust-collecting devices equipped with HEPA filtered exhausts, it must be completed in accordance with Type 2 / Moderate-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications.
Texture Plaster Coat	Friable	~30 m ²	4% Chrysotile	N/A	If removing/disturbing of one square meter or less of this material, it must be completed in accordance with Type 2 / Moderate-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum and project specifications. If removing/disturbing more than one square meter this material, it must be completed in accordance with Type 3 / High-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications.

Material Description / Location	Friable or Non-Friable	Observed Estimated Quantity to be Impacted	Asbestos Type and Percentage	Comments	Recommendations
Transite Wall Panels	Non-Friable	~10,910 m ²	20% Chrysotile	N/A	If removing/disturbing this material is done by means of non-powered hand tools it must be completed in accordance with Type 1 / Low-risk activity asbestos operations as prescribed by
2' x 2' Transite Dot Ceiling Tile	Non-Friable	~2,575 m ²	20% Chrysotile	N/A	O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications. If repair/removal/disturbance is done by means of power tools that are attached to dust-collecting devices equipped with HEPA filtered exhausts, it must be completed in accordance with Type 2 / Moderate-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications.
Magblock Pipe Insulation on the Hot Water Heating Return Line	Friable	~4,220 linear metres	15% Chrysotile	N/A	If removing/disturbing of one square meter or less of this material, it must be completed in accordance with Type 2 / Moderate-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum and project specifications. If removing/disturbing more than one square meter this material, it must be completed in accordance with Type 3 / High-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications.
Insulated Cement Fitting on the Heating System	Friable	~136 units	45% Chrysotile	N/A	
Parging Cement around Metal Sheet on Wall	Friable	< 1 linear metre	45% Chrysotile	N/A	
Aircell Pipe Insulation on the Domestic Hot Water System	Friable	~805 linear metres	65% Chrysotile	N/A	

Material Description / Location	Friable or Non-Friable	Observed Estimated Quantity to be Impacted	Asbestos Type and Percentage	Comments	Recommendations
Cardboard Pipe Insulation with Canvas on the Domestic Cold Water System	Friable	~1,100 linear metres	25% - 50% - 50% Chrysotile	N/A	If removing/disturbing of one square meter or less of this material, it must be completed in accordance with Type 2 / Moderate-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum and project specifications. If removing/disturbing more than one square meter this material, it must be completed in accordance with Type 3 / High-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications.
White Block Tank Insulation (Lower Tanks and Pressure Release Tanks)	Friable	~75 m ²	45% Chrysotile	N/A	
Canvas with Black Paper and Parging Cement over Fibreglass Duct	Friable	~600 m ²	45% - 65% Chrysotile	N/A	
Vibration Gasket – HVAC Fan Unit	Non-Friable	~38 units	70% Chrysotile	N/A	If removing/disturbing this material is done by means of non-powered hand tools it must be completed in accordance with Type 1 / Low-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications. If repair/removal/disturbance is done by means of power tools that are attached to dust-collecting devices equipped with HEPA filtered exhausts, it must be completed in accordance with Type 2 / Moderate-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications.

Material Description / Location	Friable or Non-Friable	Observed Estimated Quantity to be Impacted	Asbestos Type and Percentage	Comments	Recommendations
Internal Paper from Fire Door	Friable	~41 units	65% Chrysotile	N/A	If removing/disturbing of one square meter or less of this material, it must be completed in accordance with Type 2 / Moderate-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum and project specifications. If removing/disturbing more than one square meter this material, it must be completed in accordance with Type 3 / High-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications.
Parging Cement from Air Line Ends	Friable	< 0.5 m ²	55% Chrysotile	N/A	
Insulated Cement Fitting on the Hot Water Heating Supply	Friable	~481 units	35% Chrysotile	N/A	
Insulated Cement Fitting on the Domestic Hot Water Line	Friable	~176 units	60% Chrysotile	N/A	
Insulated Cement Fitting on the Hot Water Heating Return Line	Friable	~444 units	60% Chrysotile	N/A	
Insulated Cement Fitting on the Domestic Cold Water Line	Friable	~206 units	35% - 60% Chrysotile	N/A	

Material Description / Location	Friable or Non-Friable	Observed Estimated Quantity to be Impacted	Asbestos Type and Percentage	Comments	Recommendations
Insulated Cement Fitting on the Low Pressure Steam Line	Friable	~278 units	60% - 65% Chrysotile	N/A	If removing/disturbing of one square meter or less of this material, it must be completed in accordance with Type 2 / Moderate-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum and project specifications. If removing/disturbing more than one square meter this material, it must be completed in accordance with Type 3 / High-risk activity asbestos operations as prescribed by O. Reg. 278/05 and SOR/86-304, respectively, at a minimum, and project specifications.
Insulated Cement Fitting on the Drain Line System	Friable	~136 units	45% - 60% Chrysotile	N/A	
White Block Insulation – Hot Water Tank Insulation	Friable	~165 m ²	15% Amosite and 5% Chrysotile	N/A	
Debris Located Beside HVAC Unit	Not directly observed	Not directly observed	25% Chrysotile	Material was not directly observed by Golder during the assessment	N/A

All confirmed or presumed ACMs as summarized within Tables C.2 and C.3 included in Appendix C have been identified as being friable or non-friable materials, where possible based on accessibility.

7.2 Lead-, Arsenic-, and/or Mercury-Containing Materials

Based on the findings of the DS/HM survey, the following recommendations are made with respect to the lead-, and/or a combination of lead-containing paints, which are expected to be disturbed during the demolition of the structures at the Site:

- Disturbance of lead-containing materials, and similarity of arsenic and/or mercury paints and materials as encountered, during demolition activities, must be conducted in accordance with OSHA and project specifications, and requires precautions consistent with the Ontario Ministry of Labour, Training and Skills Development (MOL) guideline titled *Lead on Construction Projects*, updated April 2011 (MOL Lead Guideline)¹. A general lead precautions overview is provided below.

¹ Ontario Ministry of Labour, Training and Skills Development (Updated April 2011): Lead on Construction Projects. [Available Online](#).

- 2) Safety precautions must be taken to control particulate from becoming airborne during demolition or renovation projects. A worker's airborne exposure must be reduced to the lowest practical level and not to exceed the exposure limit, as prescribed by the ACGIH and adopted by the COHSR – SOR/86-304, as well as O. Reg. 490/09.
- 3) If LCMs are to be removed, they must be sent to a Ministry of the Environment Conservation and Parks (MECP) licensed recycling or disposal facility. The demolition contractor should be responsible to recover this material and prevent it from going to a landfill. If recycling of the lead is not completed, then it must be disposed of in an approved landfill. Based on the results of performed TCLP analyses, removed LCMs would either be considered as construction waste or leachate toxic waste. All leachate toxic materials would require segregation and final disposal in a landfill licensed to accept leachate toxic waste by the MECP.
- 4) Laboratory results from the remaining TCLP analysis confirmed all of the 11 paints and glazing sampled by Golder were determined to be below the maximum allowable concentration for lead, arsenic, and/or mercury leachate and therefore, can be disposed of as non-hazardous construction waste.
- 5) Historical laboratory results confirmed the Pink painted (sample L1; Wood 2018) exterior rooftop metal strut support beams, exceeded the maximum allowable concentration for lead and is classified as a lead leachate toxic waste, which must be disposed of in accordance with O. Reg. 347/90. If recycling of the material is not completed, then it must be disposed of in a MECP licensed landfill.
- 6) If materials that may contain lead are identified during renovation and/or demolition activities (e.g., emergency light batteries, solder on pipe joints, lead sheeting, flashing, brick ties, or cable wrapping), they must be treated as lead-containing until tested and proven otherwise. Any disturbance of lead-containing materials must be conducted in accordance with the OHSA and the MOL Lead Guideline.

7.3 Mercury-Containing Materials

The fluorescent light tubes/bulbs observed to be present throughout the Site are suspected to contain mercury vapour. If fluorescent light bulbs/tubes are to be removed during replacement, repair, renovation, construction or demolition operations, they must remain unbroken and kept separate from all other waste to prevent damage prior to disposal. If mercury vapours are not present in fluorescent light bulbs/tubes, they are typically not considered to be a hazardous waste product. However, if it is not possible to confirm the absence or presence of mercury vapours, they must be treated as mercury waste.

Disposal of materials containing mercury shall be performed in accordance with O. Reg. 347/90.

7.4 Silica-Containing Materials

If disturbance of SCMs such as concrete, mortar, drywall, ceiling tiles is required, disturbance must be conducted in accordance with the CLC-II, OHSA and the MOL Silica Guideline². The MOL Silica Guideline provides recommended safe measures and procedures addressing construction-related work involving disturbance of materials that may generate an exposure risk. If these measures and procedures are followed, worker exposure is not expected to be greater than occupational exposure limits for silica.

7.5 Ozone Depleting Substances

Prior to future renovation/demolition activities, any ODS-containing units should be removed and drained by a licensed technician before the equipment is decommissioned and up-to-date records should be kept detailing the transfer quantities by refrigerant types and given to the owner for their records. Maintenance, transfer and disposal of refrigerants must be conducted in accordance with O. Reg. 463/10.

² Ontario Ministry of Labour, Training and Skills Development (Updated April 2011): Silica on Construction Projects. [Available Online](#).

7.6 Polychlorinated Biphenyls

As Golder did not evaluate the ballasts due to safety concerns regarding energized equipment, it is recommended that ballast information be collected by the contractor when the systems are de-energized to determine if PCBs may be present prior to demolition unless DCC can confirm that all PCB-containing equipment has been removed from the Site. Waste management requirements for PCBs are described within Appendix A.

7.7 Other Considerations

The following considerations and/or limitations are noted and should be discussed with DCC prior to report finalization:

- As described within Section 7.2, if LCMs are not recycled and to be disposed of in a landfill, waste characterization is to be performed including analysis of both the LCM and the underlying substrate for lead leachate, using the TCLP, provided these analyses have not already been performed on the material in question. Any such LCMs and their underlying substrate material must be disposed of as hazardous waste, in accordance with O. Reg. 347/90, unless otherwise confirmed to be non-hazardous waste via TCLP analysis. The TCLP method will require permanent and significant destruction to the material to be tested. Golder recommends a discussion with project stakeholder be conducted to determine a suitable time to conduct this testing.

8.0 LIMITATIONS

This report was prepared for the exclusive use of Defence Construction Canada (DCC). This report is based on samples and information collected during the assessment conducted by Golder Associates Ltd. between 9 and 12 February 2021 and between 22 and 24 March 2021 and is based solely on the conditions encountered at the time of the sampling, as described in this report.

The conclusions and recommendations contained in this 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:

The data and findings presented in this report are valid as of the date of the investigation. The passage of time, manifestation of latent conditions or occurrence of future events may warrant further exploration at the properties, analysis of the data, and re-evaluation of the findings, observations, and conclusions expressed in this report.

The findings, observations and conclusions expressed by Golder Associates Ltd. in this report are not, and should not be considered, an opinion concerning compliance of any past or present owner or operator of the building with any federal, provincial or local laws or regulations.

Although efforts were made to expose and identify potential designated substances and other hazardous materials within the specified areas at the Site, there is a possibility that additional designated substances and/or hazardous materials may be present in concealed areas or other areas not included as part of this assessment. The assessment required discrete destructive sampling to be performed and all samples were collected with the approval of the Site Representative.

As such, if additional or suspected designated substances and/or hazardous materials are encountered during renovation and/or demolition activities that are not included in this report, it is recommended that a further investigation be conducted at that time. As such, in the case of suspected asbestos-containing materials or lead-, and/or a combination of lead-, arsenic-, or mercury-containing paints, they must be treated as such until proven otherwise. Should building materials encountered during any renovation and/or demolition activities be found to contain asbestos, these materials must be managed in accordance with SOR/86-304 and O. Reg 278/05.

Signature Page

We trust that this report meets your requirements and current needs. If you have any questions regarding the content of this technical memorandum or require any further information, please do not hesitate to contact the undersigned at (613) 592-9600. Thank you for the opportunity to be of service. We look forward to working with you again.

Golder Associates Ltd.



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[https://golderassociates.sharepoint.com/sites/138036/project files/6 deliverables/b52/dshms report/20442331-r-rev1-b52 proj no.hq1562dc_cfb trenton_dshms.docx](https://golderassociates.sharepoint.com/sites/138036/project%20files/6%20deliverables/b52/dshms%20report/20442331-r-rev1-b52%20proj%20no.hq1562dc_cfb%20trenton_dshms.docx)

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APPENDIX A

Regulations and Guidelines

REGULATIONS AND GUIDELINES

Canada Occupational Health and Safety Regulations, SOR/86-304 (COHSR), Part X – Hazardous Substances

The Site is federally regulated, and therefore worker exposure to chemical agents is regulated under the *Canada Occupational Health and Safety Regulations*, SOR/86-304 (COHSR) made under the *Canada Labour Code Part II* (CLC-II). In addition, the general duty clause of CLC-II requires employers to ensure that the health and safety of their employees is protected.

COHSR *Part X – Hazardous Substances*, lists prescribed requirements for the control of hazardous substances in federally regulated workplaces. Specifically, Section 124 of the CLC-II requires the employer to ensure that the health and safety at work of every person employed by the employer is protected. Furthermore, Section 10.19(1) of the CLC-II requires the employer to ensure that worker exposure to chemical agents do not exceed the recommended limits of the American Conference of Governmental Industrial Hygienists (ACGIH) publication entitled *Threshold Limit Values (TLVs) and Biological Exposure Indices*, dated 1994-1995, as amended from time to time.

Designated Substances

Although designated substances are not defined under federal regulations, they have been included here to meet the project requirements. The project scope of work entailed a review of designated substances.

The Ontario *Occupational Health and Safety Act*, Revised Statutes of Ontario (R.S.O.) 1990, Chapter 0.1 (OHSa) defines designated substances and outlines the basic duties of project owners regarding designated substances on project sites. According to the “Duty of project owners” requirement under Section 30 (1) of the OHSa, prior to beginning a construction project (including renovation or demolition) a document summarizing the presence of these designated substances must be available to contractors and subcontractors as part of the tendering of information. In addition, the Ontario Regulation 490/09: *Designated Substances* (O. Reg. 490/09), as amended and made under OHSa, prescribes occupational exposure limits and any required assessment and control programs for designated substances which exist within a building, project site or workplace.

Asbestos

The CLC-II was amended in 2017, which resulted in occupational health and safety regulation changes regarding asbestos. The amended regulation defines an asbestos-containing material (ACM) to be any material containing 1% or more asbestos by weight.

Under Section 10.26.1 of the COHSR, if ACM is present in a workplace and there is the potential for a release of asbestos fibres or employee exposure to asbestos fibres, the employer shall ensure that a qualified person carry out a hazard investigation, including identifying and documentation of the type, condition, friability, accessibility, likelihood of damage and potential release of fibres. Golder’s assessment was performed to serve this purpose.

Furthermore, if asbestos is identified during the hazard investigation, an Asbestos Control Plan must be in place prior to undertaking work involving ACM to ensure ACM is classified (as high-, moderate- or low-risk activity), ACM has been identified, and that procedures and controls are in place to prevent exposure; including asbestos dust, waste, and debris removal, decontamination, and air sampling requirements.

Provincial Asbestos Regulations

Section 10 of Ontario Regulation 278/05: *Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations* (O. Reg. 278/05), as amended and made under the OHSA, outlines specific procedures for the identification of ACMs in buildings and on construction sites and protocols for their removal or disturbance during renovation. O. Reg. 278/05 defines as an ACM as a material that contains 0.5 per cent or more asbestos by dry weight. For the purposes of Golder's assessment, the O. Reg. 278/05 definition of asbestos was applied as Golder's mandate was to review Designated Substances at the Site which are relevant to Ontario, and subsequent remediation work will be carried out by workers falling under the Ministry of Labour, Training and Skills Development (MLTSD).

Under Section 30 of the OHSA, before beginning a project, the owner shall determine whether any designated substances are present at each project site and shall prepare a list of all designated substances that are present at each site.

Ontario Regulation 347 entitled *General – Waste Management* as amended (O. Reg. 347/90), made under the Ontario *Environmental Protection Act*, R.S.O. 1990, Chapter E.19, as amended, sets out requirements for general waste management including ACM. The regulation defines "asbestos waste" as "solid or liquid waste that results from the removal of asbestos-containing construction or insulation materials or from the manufacture of asbestos-containing products and contains asbestos in more than a trivial amount or proportion". This regulation requires the disposal of asbestos waste in a double sealed container, properly labelled and free of cuts, tears or punctures. The waste must be disposed of in a licensed waste facility which has been properly notified of the presence of asbestos waste.

Arsenic-, Lead-, Mercury-, Chromium- or Polychlorinated Biphenyls in Paints

The OHSA does not prescribe criteria for the use of arsenic in paints. However, disturbance may cause exposure to airborne arsenic, which must be limited and precautionary measures put in place to ensure that a worker's airborne exposure is reduced to the lowest practical level and does not exceed the exposure limit of 0.01 mg/m³ (Time-Weighted Average Limit (TWA)) as prescribed by the ACGIH and adopted by the COHSR – SOR/86-304, as well as O. Reg. 490/09, for arsenic. In the absence of a prescribed level at which a paint is classified as arsenic-containing, paints identified by laboratory analysis to have detectable levels of arsenic have been classified as arsenic-containing. For the purposes of this report, the laboratory method detection limit (MDL) for arsenic is 50 µg/g.

The Government of Canada passed the *Surface Coating Materials Regulations* (SOR/2016-193), under the *Canada Consumer Product Safety Act*. The regulations were amended in 2010 setting the limit for lead content of surface coating materials at 90 mg/kg (equivalent to 90 µg/g or 90 ppm) and mercury content of surface coating materials at 10 mg/kg (equivalent to 10 µg/g or 10 ppm). These limits are specifically for consumer products; however, they have been historically used as industry accepted limits for lead and mercury content in paints and for the purposes of this report, have been applied to define a lead- or mercury-containing paint. Potential for exposure to lead and mercury are dependent on the type of work operations performed for the disturbance of lead or mercury coatings. A worker's airborne exposure must be reduced to the lowest practical level and not to exceed the exposure limit of 0.050 mg/m³ (TWA) for lead and 0.025 mg/m³ (TWA) for mercury, as prescribed by the ACGIH and adopted by the COHSR – SOR/86-304, as well as O. Reg. 490/09.

The Occupational Health and Safety Branch of the MLTSD published their Guideline entitled *Lead on Construction Projects*, revised in April 2011 (MLTSD Lead Guideline), to raise the awareness of employers and workers in the construction industry of the hazards posed by lead in construction and the measures and procedures that should be taken to control those hazards. Currently, this document represents due diligence practice for lead exposure control on construction projects, as enforced by the MLTSD under the General Duty clause 25(2)(h) of the OHSA. As such, it is referenced within the report, where appropriate, to provide guidance on appropriate handling and exposure control procedures when dealing with lead.

Disposal of lead must be done in accordance with the requirements of O. Reg. 347/90.

Mercury

Golder's review of mercury was included a visual assessment of potential mercury-containing equipment and noted damage, where observed. Intact mercury-containing equipment do not create an airborne concentration or exposure risk and thus meet the requirements of the CLC-II. A worker's airborne exposure must be reduced to the lowest practical level and not to exceed the exposure limit 0.025 mg/m³ (TWA) for mercury, as prescribed by the ACGIH and adopted by the COHSR (SOR/86-304), as well as O. Reg. 490/09.

Disposal of mercury must be done in accordance with the requirements of O. Reg. 347/90.

Silica

The federally regulated TLV-TWA for crystalline silica made under the COHSR (SOR/86-304) is 0.025 mg/m³. However, silica-containing materials in good condition and not anticipated to be disturbed will not create an exposure risk. Therefore, Golder's review of silica was limited to a visual assessment and noted damage, where observed.

The Occupational Health and Safety Branch of the MLTSD published their Guideline entitled *Silica on Construction Projects*, revised in 2011 ("MLTSD Silica Guideline"), to raise the awareness of employers and workers in the construction industry of the hazards posed by silica in construction and the measures and procedures that should be taken to control those hazards. The MLTSD Silica Guideline should be consulted for the removal or disturbance of silica in absence of Canadian regulations governing the removal or disturbance of silica. Currently, this document represents due diligence practice for silica exposure control on construction projects, as enforced by the MLTSD under the General Duty clause 25(2)(h) of the OHSA. As such, it is referenced within the report, where appropriate, to provide guidance on appropriate handling and exposure control procedures when dealing with silica.

Other Designated Substances

In addition to the four designated substances that have a high probability of being present at the Site, which are discussed in detail in the previous sections, the following seven designated substances as defined in the regulations under the OHSA were included in this survey: acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates and vinyl chloride. Based on Golder's professional experience, none of these substances were expected to be present and, as such, no specific observations or sampling of materials potentially containing these substances were undertaken.

Ozone-Depleting Substances (ODS)

An ozone-depleting substance (ODS) refers to any substance containing chlorofluorocarbon (CFC), hydrochlorofluorocarbon (HCFC), halon or any other material capable of destroying ozone in the atmosphere. ODSs have been used in rigid polyurethane foam and insulation, laminates, aerosols, air conditioners, fire extinguishers, cleaning solvents and the sterilization of medical equipment. Federal regulations introduced in 1995 required the elimination of production and import of CFCs by January 1, 1996 (subject to certain essential uses) and a freeze on the production and import of HCFCs by January 1, 1996, unless by permit. These regulations also require the phase-out of CFCs at the time of major overhauls of a cooling system after January 1, 2005. Some Provinces have also enacted legislation that places use prohibitions on certain listed ozone depleting substances.

As the regulations govern only the production and import of certain ODSs, they are allowed to be used in Canada, as long as there is a supply in place. Eventually the supply will run out, and the present equipment will either need to be refitted or replaced. It is understood from several air conditioning companies, that there is a sufficient supply of CFCs and HCFC-22 in Canada for at least the next several years. The federal Hazardous Products Act (HPA) does not require the licensing, approval or registration of a property in which ODSs have been identified. However, provincial regulations require the licensing of contractors who handle ODSs through equipment servicing.

Polychlorinated Biphenyls (PCBs)

R.R.O. 1990, Regulation 362 *Waste Management – PCB'S* as amended (Reg. 362), made under the Ontario *Environmental Protection Act*, R.S.O. 1990, Chapter E.19, as amended sets out requirements for PCB waste management.

Additionally, section 3(1) of Reg. 833 requires the employer to take all measures reasonably necessary in the circumstances to protect workers from exposure to a hazardous biological or chemical agents due to the storage, handling, processing or use of such agents in the workplace. Appropriate dermal protection is crucial to worker protection when handling ballasts and transformer fluids.

APPENDIX B

Methodology

METHODOLOGY

Suspected Asbestos-Containing Materials

In the absence of federal regulations, Golder collected asbestos bulk samples in accordance with *Ontario Regulation 278/05: Asbestos on Construction Projects and in Building Repair Operations* (O. Reg. 278/05), as amended, made under the *Occupational Health and Safety Act* (OHSA), which stipulates that a minimum number of samples per “homogeneous material” (a material that is uniform in colour and texture) are required to verify the presence or absence of asbestos.

The number of samples of each “homogeneous material” was collected in accordance with Bulk Material Samples of O. Reg. 278/05 summarized in Table B.1 below:

Table B.1: Bulk Material Samples – Asbestos

Type of Material	Size of Area of Homogeneous Material	Minimum Number of Samples
Surfacing material, including without limitation material that is applied to surfaces by spraying, by troweling or otherwise. Examples include acoustical plaster on ceilings and fireproofing materials on structural members	Less than 90 m ² (969 ft ²)	3
	90 or more m ² , but less than 450 m ² (4,844 ft ²)	5
	450 or more m ² (more than 4,844 ft ²)	7
Thermal insulation, except as described below	Any size	3
Thermal insulation patch	Less than 2 linear meters (6.6 ft.) or 0.5 m ² (approximately 5.4 ft ²)	1
Other material	Any size	3

Representative samples of suspected asbestos-containing materials (ACMs) were submitted to an independent accredited laboratory (EMSL Canada, Inc., 22 Antares Drive, Ottawa, Ontario, NVLAP accreditation #201040-0) for asbestos content analysis. Polarized Light Microscopy was completed in accordance with EPA methodologies and dispersion staining techniques (EPA Method 600/R-93/116). Sample analysis was conducted as per O. Reg. 278/05. Samples from homogeneous areas were grouped together and analyzed.

Materials reported to contain less than 0.5% asbestos (dry weight), including those referred to as less than the limit of detection (<LOD) or trace, are not considered to be ACMs under current Ontario regulations. The LOD is 0.5%.

Suspected Arsenic-, Lead-, Mercury-, Chromium- or PCB-Containing Materials

Visual assessment and sampling of materials suspected to be arsenic-, lead-, or mercury-containing, primarily paints and ceramic glazing, were completed as part of the assessment. Samples of suspect paints were extracted using a clean knife and scraping off a small piece of the material. Care was taken to penetrate all paint layers at each sample location. Bulk samples of representative ceramic tiles were also collected.

Collected samples were placed in sealed bags and labelled for submission to Paracel Laboratories Ltd., 300-2319 St. Laurent Blvd, Ottawa, Ontario (Canadian Association for Laboratory Accreditation (CALA) Inc., Certificate of Accreditation No. 1262) for analyses. Metals analysis was completed following EPA method 6020 - Digestion – ICP-MS. Mercury analysis was completed following EPA Method 7471B – CVAA, digestion.

Toxicity Characteristic Leaching Procedure

In order to complete waste characterization, as specified in O. Reg. 347/90, as amended, made under the Ontario *Environmental Protection Act* (EPA), R.S.O., 1990, Chapter E.19., samples of materials with suspected arsenic-, lead-, or mercury-containing paint were collected, including the painted/glazed surface and the underlying substrate.

Collected samples were placed in sealed bags and labelled for submission to Paracel Laboratories for TCLP analyses. Metals analysis was completed following method TCLP EPA 6020 - Digestion - ICP-MS. Mercury analysis was completed following EPA 7470A - Cold Vapour AA.

Suspected Mercury-Containing Materials

An assessment for potential mercury-containing equipment at the Site was completed as part of the survey. Mercury-containing thermostats and fluorescent light tubes and bulbs that may be impacted during the demolition operations were noted, where observed. Elemental mercury may be present in switches and electrical switchgears.

Suspected Silica-Containing Materials

Silica is a common component of many building construction materials (i.e., concrete and masonry products). A visual assessment was completed to determine the presence of silica-containing materials (SCMs) within the project areas at the Site.

Other Designated Substances

Other designated substances as defined in *Ontario Regulation 490/09: Designated Substances* (O. Reg. 490/09), as amended, made under the OHSA, include acrylonitrile, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates and vinyl chloride. Based on professional experience, none of these substances were expected to be present and, as such, no specific observations or sampling of materials potentially containing these substances were undertaken as part of this assessment.

Ozone Depleting Substances

An assessment for potential halocarbon-containing equipment at the Site was completed as part of the assessment, where accessible. Ozone Depleting Substance (ODS) containing equipment such as air conditioners, refrigerators and freezers were noted if observed.

Polychlorinated Biphenyls

A visual assessment of potential Polychlorinated Biphenyls (PCB) containing equipment (i.e., fluorescent lighting system ballasts) was conducted at the Site. Due to health and safety concerns associated with energized fluorescent lighting systems, connected and energized fluorescent lights were not breached or accessed during the assessment. If necessary and prior to disposal, label information from the ballasts such as the manufacturer, model numbers, serial numbers, and date codes can be collected and compared to the criteria found in the Environment Canada Report EPS 2/CC/2 (revised) August 1991 – *Identification of Lamp Ballasts Containing PCBs*.

APPENDIX C

Spreadsheet of Findings

Table C.1: Summary of Materials Observed During Destructive Exploratory Assessments

Locations	Description of Materials (From Upper Layer to Lower Layer)	Photograph
Exterior of North and South Perimeter Walls – Exploratory Opening: Typical perimeter wall construction for north and south facades of Building 52 above cinderblock wall base	Exterior corrugated Transite panel, fibreglass insulation, tar paper layer, interior flat Transite panel	

Table C.1: Summary of Materials Observed During Destructive Exploratory Assessments

Locations	Description of Materials (From Upper Layer to Lower Layer)	Photograph
Interior of North and South Perimeter Walls – Exploratory Opening: Typical perimeter wall construction for north and south facades of Building 52; cinderblock wall base	Interior cinderblock wall, empty wall cavity, exterior brick wall (no insulation materials observed within wall cavity or cinderblock cavities)	
		

Table C.1: Summary of Materials Observed During Destructive Exploratory Assessments

Locations	Description of Materials (From Upper Layer to Lower Layer)	Photograph
Central West and Central East Hanger Walls – Exploratory Opening: Typical perimeter wall construction for interior cinderblock walls in hangers within Building 52	Single course of cinderblock wall (no insulation materials observed within cinderblock cavities)	
Central West and Central East Hanger Walls – Exploratory Opening: Typical perimeter wall construction for second floor interior cinderblock walls in hangers within Building 52	Single course of cinderblock wall (no insulation materials observed within cinderblock cavities)	

Table C.1: Summary of Materials Observed During Destructive Exploratory Assessments

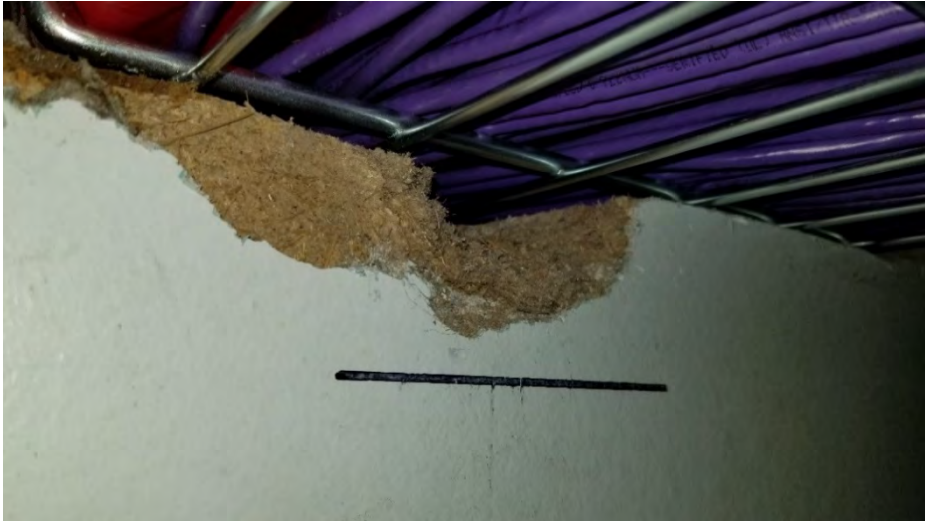
Locations	Description of Materials (From Upper Layer to Lower Layer)	Photograph
Interior Side of Second Floor Corridor Walls (to Roof Exterior) – Exploratory Opening: Typical wall construction for second floor corridor Transite panel walls	Interior flat Transite panel, cellulose fibre board, flat Transite panel, wall cavity, applications of yellow spray insulation foam, roof exterior corrugated Transite panel	
		

Table C.2: Summary of Materials Visually Assessed and Sampled for Asbestos

Material ⁽¹⁾ Description	Material Location	Observed Estimated Quantity ⁽²⁾	Condition	Friable (Yes / No)	Accessibility ⁽³⁾	Sample Number	Asbestos Concentration (%) and Type	Photograph
Tan mastic	Associated with navy vinyl baseboard (Room 1007)	N/A ⁽⁴⁾	N/A	N/A	N/A	A-002A to A-002C	None Detected	
Yellow/tan mastic	Associated with grey vinyl baseboard (Rooms 1015 - 1018)	N/A	N/A	N/A	N/A	A-005A to A-005C	None Detected	

Table C.2: Summary of Materials Visually Assessed and Sampled for Asbestos

Material ⁽¹⁾ Description	Material Location	Observed Estimated Quantity ⁽²⁾	Condition	Friable (Yes / No)	Accessibility ⁽³⁾	Sample Number	Asbestos Concentration (%) and Type	Photograph
Yellow mastic	Present on wall penetration openings in utility spaces throughout Site	N/A	N/A	N/A	N/A	A-010A to A-010C	None Detected	
Grey cinderblock mortar	Present in cinderblock and mortar walls throughout Site	N/A	N/A	N/A	N/A	A-011A to A-011G	None Detected	

Table C.2: Summary of Materials Visually Assessed and Sampled for Asbestos

Material ⁽¹⁾ Description	Material Location	Observed Estimated Quantity ⁽²⁾	Condition	Friable (Yes / No)	Accessibility ⁽³⁾	Sample Number	Asbestos Concentration (%) and Type	Photograph
Grey brick mortar	Present in brick walls throughout Site	N/A	N/A	N/A	N/A	A-012A to A-012G	None Detected	
1' x 1' white with grey streaks vinyl floor tiles (VFTs)	Present on floor of Room 1118	N/A	N/A	N/A	N/A	A-013A to A-013C	None Detected	
Black mastic	Associated with 1' x 1' white with grey streaks VFTs (A-013)	N/A	N/A	N/A	N/A	A-014A to A-014G	None Detected	

Table C.2: Summary of Materials Visually Assessed and Sampled for Asbestos

Material ⁽¹⁾ Description	Material Location	Observed Estimated Quantity ⁽²⁾	Condition	Friable (Yes / No)	Accessibility ⁽³⁾	Sample Number	Asbestos Concentration (%) and Type	Photograph
1' x 1' blue with white streaks VFTs	Present on floor of Room 1118	N/A	N/A	N/A	N/A	A-015A to A-015C	None Detected	
Dark grey mortar	Present under red ceramic flooring in Rooms 1137, 1138 and 1139	N/A	N/A	N/A	N/A	A-017A to A-017C	None Detected	

Table C.2: Summary of Materials Visually Assessed and Sampled for Asbestos

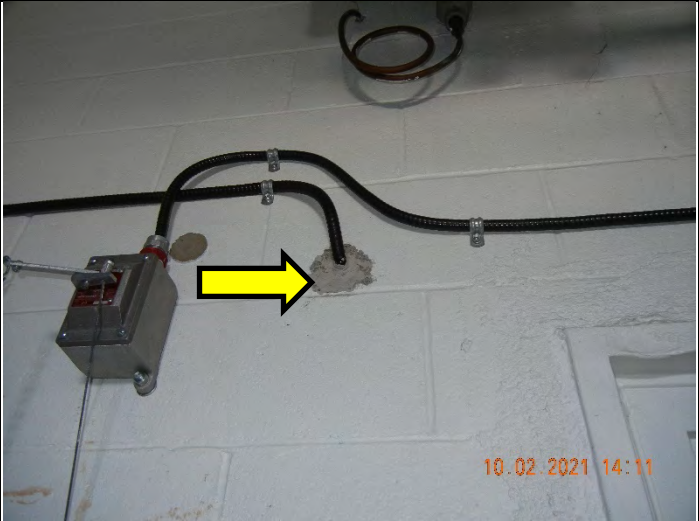
Material ⁽¹⁾ Description	Material Location	Observed Estimated Quantity ⁽²⁾	Condition	Friable (Yes / No)	Accessibility ⁽³⁾	Sample Number	Asbestos Concentration (%) and Type	Photograph
Light grey firestop caulking	Present applied to wall penetration openings in Room 1137	N/A	N/A	N/A	N/A	A-018A to A-018C	None Detected	
Grey parging cement firestop	Present applied to wall penetration openings in Room 1137	N/A	N/A	N/A	N/A	A-019A to A-019E	None Detected	

Table C.2: Summary of Materials Visually Assessed and Sampled for Asbestos

Material ⁽¹⁾ Description	Material Location	Observed Estimated Quantity ⁽²⁾	Condition	Friable (Yes / No)	Accessibility ⁽³⁾	Sample Number	Asbestos Concentration (%) and Type	Photograph
Grey caulking (interior windows)	Present on second floor interior office windows	N/A	N/A	N/A	N/A	A-023A to A-023C	None Detected	
Light grey caulking	Present applied to construction seams in exterior corrugate Transite Paneling (A-030)	N/A	N/A	N/A	N/A	A-026A to A-026C	None Detected	

Table C.2: Summary of Materials Visually Assessed and Sampled for Asbestos

Material ⁽¹⁾ Description	Material Location	Observed Estimated Quantity ⁽²⁾	Condition	Friable (Yes / No)	Accessibility ⁽³⁾	Sample Number	Asbestos Concentration (%) and Type	Photograph
Blue/grey caulking	Present applied to exterior construction seams around select doors	N/A	N/A	N/A	N/A	A-027A to A-027C	None Detected	

Table C.2: Summary of Materials Visually Assessed and Sampled for Asbestos

Material ⁽¹⁾ Description	Material Location	Observed Estimated Quantity ⁽²⁾	Condition	Friable (Yes / No)	Accessibility ⁽³⁾	Sample Number	Asbestos Concentration (%) and Type	Photograph
Black caulking	Present applied under blue/grey caulking (A-027) around select exterior doors	N/A	N/A	N/A	N/A	A-028A to A-028C	None Detected	
White/grey caulking	Present applied to select exterior wall construction seams	N/A	N/A	N/A	N/A	A-029A to A-029C	None Detected	

Table C.2: Summary of Materials Visually Assessed and Sampled for Asbestos

Material ⁽¹⁾ Description	Material Location	Observed Estimated Quantity ⁽²⁾	Condition	Friable (Yes / No)	Accessibility ⁽³⁾	Sample Number	Asbestos Concentration (%) and Type	Photograph
Corrugated Transite panels	Present installed as exterior wall finish	~3,750 m ²	Good; fair in select locations	No	A	A-030A to A-030C	15% Chrysotile	

Table C.2: Summary of Materials Visually Assessed and Sampled for Asbestos

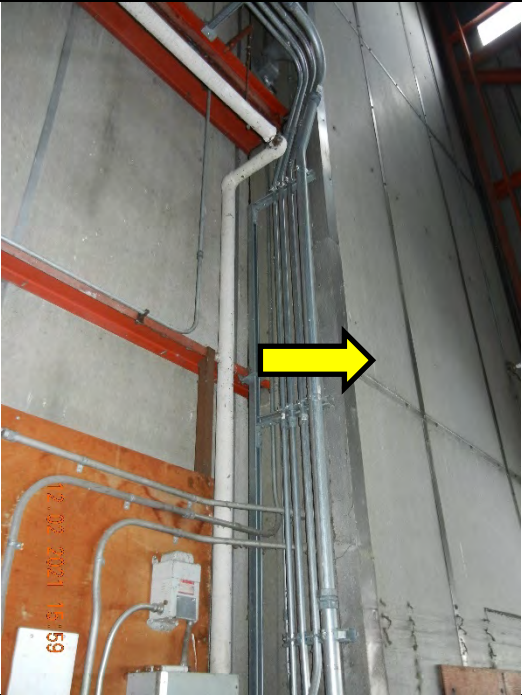
Material ⁽¹⁾ Description	Material Location	Observed Estimated Quantity ⁽²⁾	Condition	Friable (Yes / No)	Accessibility ⁽³⁾	Sample Number	Asbestos Concentration (%) and Type	Photograph
Flat Transite panels	Present on sections of north and south hanger walls and exterior finish	~4,750 m ²	Good; fair in select locations	No	A	A-033A to A-033C	22% Chrysotile	

Table C.2: Summary of Materials Visually Assessed and Sampled for Asbestos

Material ⁽¹⁾ Description	Material Location	Observed Estimated Quantity ⁽²⁾	Condition	Friable (Yes / No)	Accessibility ⁽³⁾	Sample Number	Asbestos Concentration (%) and Type	Photograph
White firestop caulking	Present applied to interior construction seams throughout the Site	N/A	N/A	N/A	N/A	A-034A to A-034C	None Detected	
Grey caulking	Select seams in interior Transite panels in hanger area	~65 linear metres	Good	No	A	A-035A to A-035C	3% Chrysotile	

Table C.2: Summary of Materials Visually Assessed and Sampled for Asbestos

Material ⁽¹⁾ Description	Material Location	Observed Estimated Quantity ⁽²⁾	Condition	Friable (Yes / No)	Accessibility ⁽³⁾	Sample Number	Asbestos Concentration (%) and Type	Photograph
Grey vinyl floor tile	Present in second floor office area (Room 2088)	N/A	N/A	N/A	N/A	A-036A to A-036C	None Detected	
Brown/tan mastic	Associated with installed Grey vinyl floor tiles (A-036)	N/A	N/A	N/A	N/A	A-037A to A-037C	None Detected	
Grey cinderblock mortar	Present applied to visually distinct patch in exterior cinderblock wall (S façade)	N/A	N/A	N/A	N/A	A-038A to A-038C	None Detected	

Table C.2: Summary of Materials Visually Assessed and Sampled for Asbestos

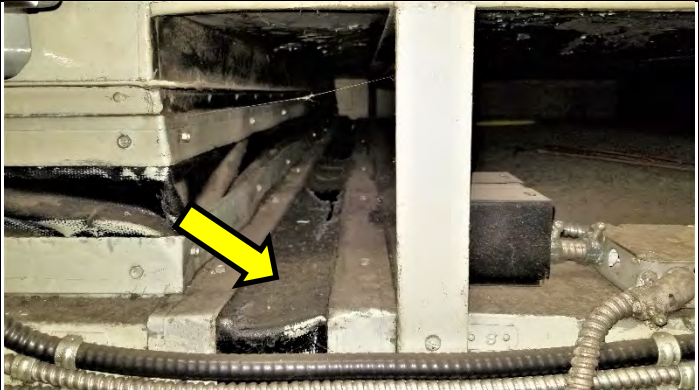
Material ⁽¹⁾ Description	Material Location	Observed Estimated Quantity ⁽²⁾	Condition	Friable (Yes / No)	Accessibility ⁽³⁾	Sample Number	Asbestos Concentration (%) and Type	Photograph
Black duct expansion flex joint	Present on HVAC ductwork installed within second floor mechanical rooms and fan rooms	N/A	N/A	N/A	N/A	A-039A to A-039C	None Detected	
Grey construction putty	Present applied to perimeter wall construction seams above perforated ceiling tiles in second floor corridor and washroom spaces (where observed)	~800 linear metres	Good	No	C	A-041A to A-041C	6% Chrysotile	

Table C.2: Summary of Materials Visually Assessed and Sampled for Asbestos

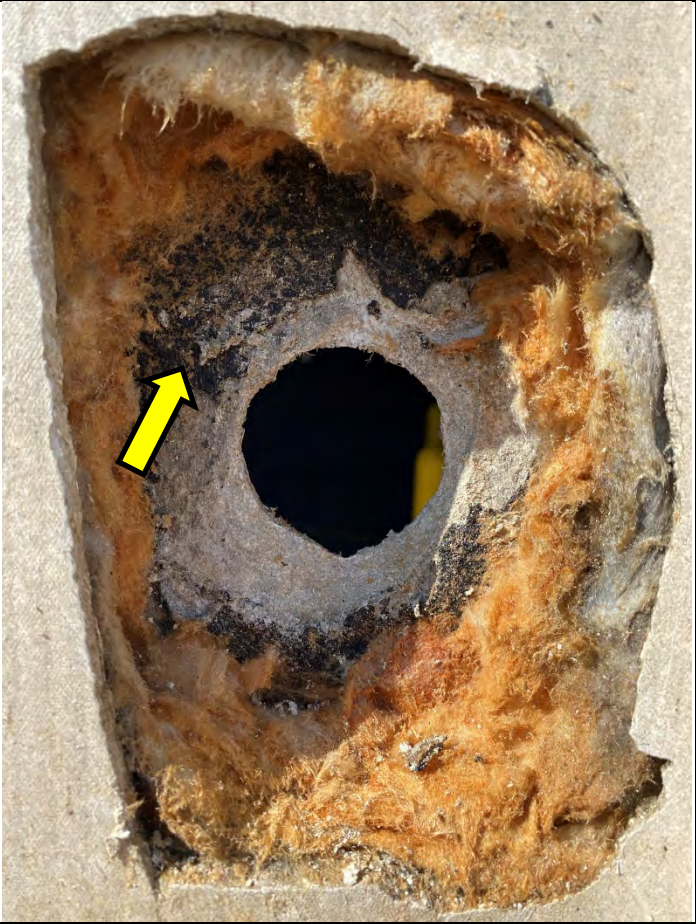
Material ⁽¹⁾ Description	Material Location	Observed Estimated Quantity ⁽²⁾	Condition	Friable (Yes / No)	Accessibility ⁽³⁾	Sample Number	Asbestos Concentration (%) and Type	Photograph
Black tar paper layer	Present in perimeter building envelope	~3,750 m ²	Good to fair	Yes	D	A-042A to A-042C	2% Chrysotile	

Table C.2: Summary of Materials Visually Assessed and Sampled for Asbestos

Material ⁽¹⁾ Description	Material Location	Observed Estimated Quantity ⁽²⁾	Condition	Friable (Yes / No)	Accessibility ⁽³⁾	Sample Number	Asbestos Concentration (%) and Type	Photograph
Dark grey duct joint caulking	Present on ductwork encountered above second floor drop ceilings	N/A	N/A	N/A	N/A	A-043A to A-043C	None Detected	

Table C.2: Summary of Materials Visually Assessed and Sampled for Asbestos

Material ⁽¹⁾ Description	Material Location	Observed Estimated Quantity ⁽²⁾	Condition	Friable (Yes / No)	Accessibility ⁽³⁾	Sample Number	Asbestos Concentration (%) and Type	Photograph
Cast iron Bell and Spigot Joint packing material – Present installed throughout the Site	Installed piping and drains throughout the Site	~350 units observed	Good	No	A	Material not sampled	Material not sampled; presumed asbestos- containing	

Notes:

(1) All materials found to be in likeness to confirmed or presumed ACMs must be handled like ACMs unless otherwise confirmed by laboratory analysis.

(2) All quantities are estimated based on observations made at the time of the assessment. Material quantities and locations must be verified by qualified remediation contractors.

(3) The accessibility of known ACMs is rated in accordance with the following criteria:

Access (A): Areas of the building within reach (from floor level) of all building users. Includes areas such as gymnasiums, workshops, and storage areas where activities of the building users (for example basketball on gym ceiling) may result in disturbance of ACM not normally within reach from floor level.

Access (B): Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder. Includes: frequently entered pipe chases, tunnels and service areas or areas within reach from a fixed ladder or catwalk, for example tops of equipment, mezzanines.

Access (C) Exposed: Areas of the building above 8'0" where use of a ladder is required to reach the ACM. Only refers to ACMs that are exposed to view, from the floor or ladder, without removing or opening other building components such as ceiling tiles, or service access doors or hatches. Does not include infrequently-accessed service areas of the building.

Access (C) Concealed: Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems such as a ventilation plenum. Includes rarely-entered crawl spaces, attic spaces, etc. Observations are limited to the extent visible from the access points.

Access (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 ACM. Evaluation of condition and extent of ACM is limited or impossible, depending on the assessor's ability to visually examine the materials in areas rated Access (D).

(4) "N/A" indicates Not Applicable. Sampled material contains less than 1% and 0.5% of asbestos by weight and is not considered to be an ACM in accordance with the COHSR-SOR/86-304 and O. Reg. 278/05, respectively.

Table C.3: Summary of Previously Sampled and Confirmed Asbestos-Containing Materials

Material ⁽¹⁾ Description	Condition	Estimated Quantity ⁽²⁾	Friable (Yes / No)	Accessibility ⁽³⁾	Homogeneous Group / Material ID (as per historical report source)	Historical Report Source ⁽²⁾	Asbestos Concentration (%) and Type
Brown Roofing Shingle Material	Not directly observed	~16,815 m ²	No	B	4A to 4C	Wood 2018	7% Chrysotile
Rooftop Exterior Transite Panels	Good	~1,175 m ²	No	B	6A to 6C	Wood 2018	40% Amosite
12" x 12" Salmon with White Streaks Floor Tile	N/A	~250 m ²	No	A	HF-03 (Tile)	OESN 2009	2% Chrysotile
9" x 9" Green with White Streaks Floor Tile	N/A	~110 m ²	No	A	HF-12 (Tile)	OESN 2009	2% Chrysotile
9" x 9" Grey Floor Tile	N/A	~15 m ²	No	A	HF-13 (Tile)	OESN 2009	2% Chrysotile

Table C.3: Summary of Previously Sampled and Confirmed Asbestos-Containing Materials

Material ⁽¹⁾ Description	Condition	Estimated Quantity ⁽²⁾	Friable (Yes / No)	Accessibility ⁽³⁾	Homogeneous Group / Material ID (as per historical report source)	Historical Report Source ⁽²⁾	Asbestos Concentration (%) and Type
Mastic (associated with 12" x 12" White with Black Speckled Floor Tile)	N/A	~30 m ²	No	A	HF-14 (Mastic)	OESN 2009	2% Chrysotile
Mastic (associated with 12" x 12" Solid Grey Floor Tile)	N/A	~75 m ²	No	A	HF-15 (Mastic)	OESN 2009	2% Chrysotile
Black Mastic (associated with 12" x 12" Beige with Black Streaks Floor Tile)	N/A	~145 m ²	No	A	HF-19 (Mastic)	OESN 2009	3% Chrysotile
9" x 9" White with Black Streaks Floor Tile	N/A	~920 m ²	No	A	HF-22 (Tile)	OESN 2009	5% Chrysotile
Black Mastic (associated with 9" x 9" White with Black Streaks Floor Tile)	N/A	~920 m ²	No	A	HF-22 (Mastic)	OESN 2009	5% Chrysotile

Table C.3: Summary of Previously Sampled and Confirmed Asbestos-Containing Materials

Material ⁽¹⁾ Description	Condition	Estimated Quantity ⁽²⁾	Friable (Yes / No)	Accessibility ⁽³⁾	Homogeneous Group / Material ID (as per historical report source)	Historical Report Source ⁽²⁾	Asbestos Concentration (%) and Type
9" x 9" Olive Green with White Streaks Floor Tile	N/A	~650 m ²	No	A	HF-23 (Tile)	OESN 2009	3% Chrysotile
Black Mastic (associated with 9" x 9" Olive Green with White Streaks Floor Tile)	N/A	~650 m ²	No	A	HF-23 (Mastic)	OESN 2009	5% Chrysotile
12" x 12" Chocolate Brown with White Streaks Floor Tile	N/A	~30 m ²	No	A	HF-24 (Tile)	OESN 2009	2% Chrysotile
Black Mastic (associated with 9" x 9" Off-Beige with Light Streaks Floor Tile)	N/A	~2 m ²	No	A	HF-26 (Mastic)	OESN 2009	2% Chrysotile
9" x 9" Dark Grey with Black and White Streaks Floor Tile	N/A	~6.5 m ²	No	A	HF-27 (Tile)	OESN 2009	3% Chrysotile

Table C.3: Summary of Previously Sampled and Confirmed Asbestos-Containing Materials

Material ⁽¹⁾ Description	Condition	Estimated Quantity ⁽²⁾	Friable (Yes / No)	Accessibility ⁽³⁾	Homogeneous Group / Material ID (as per historical report source)	Historical Report Source ⁽²⁾	Asbestos Concentration (%) and Type
Black Mastic (associated with 9" x 9" Dark Grey with Black and White Streaks Floor Tile)	N/A	~6.5 m ²	No	A	HF-27 (Mastic)	OESN 2009	2% Chrysotile
Black Mastic (associated with 12" x 12" White with Grey Flecks Floor Tile)	N/A	~55 m ²	No	A	HF-28 (Mastic)	OESN 2009	2% Chrysotile
Black Mastic (associated with 12" x 12" Blue, Rose, Beige Army Pattern Floor Tile)	N/A	~235 m ²	No	A	HF-29 (Mastic)	OESN 2009	3% Chrysotile
Black Mastic (associated with 12" x 12" White with Bright Blue Flecks Floor Tile)	Good; fair in select locations	~20 m ²	No	A	HF-32 (Mastic)	OESN 2009	2% Chrysotile
Black Mastic (associated with 12" x 12" Rose with Brown Flecks Floor Tile)	Good; fair in select locations	~2 m ²	No	A	HF-33 (Mastic)	OESN 2009	2% Chrysotile

Table C.3: Summary of Previously Sampled and Confirmed Asbestos-Containing Materials

Material ⁽¹⁾ Description	Condition	Estimated Quantity ⁽²⁾	Friable (Yes / No)	Accessibility ⁽³⁾	Homogeneous Group / Material ID (as per historical report source)	Historical Report Source ⁽²⁾	Asbestos Concentration (%) and Type
Black Mastic (associated with Rubber Flooring in second floor corridor)	N/A	~2,250 m ²	No	A	HF-34	OESN 2009	5% Chrysotile
Black/Yellow Mastic	Good	~100 m ²	No	A	HF-36	OESN 2009	5% Chrysotile
12" x 12" Mustard Yellow with White Streaks Floor Tile	N/A	~55 m ²	No	A	HF-38 (Tile)	OESN 2009	2% Chrysotile
White Floor Tile (concealed under 12" x 12" Navy Blue with White Streaks Floor Tile)	N/A	~125 m ²	No	A	HF-41 (Concealed Tile)	OESN 2009	5% Chrysotile
Black Mastic (associated with concealed White Floor Tiles under 12" x 12" Navy Blue with White Streaks Floor Tile)	N/A	~125 m ²	No	A	HF-41 (Concealed Mastic)	OESN 2009	5% Chrysotile

Table C.3: Summary of Previously Sampled and Confirmed Asbestos-Containing Materials

Material ⁽¹⁾ Description	Condition	Estimated Quantity ⁽²⁾	Friable (Yes / No)	Accessibility ⁽³⁾	Homogeneous Group / Material ID (as per historical report source)	Historical Report Source ⁽²⁾	Asbestos Concentration (%) and Type
Drywall and Joint Compound	N/A	~2,840 m ²	No	A	HW-03A	OESN 2009	2% Chrysotile
Texture Plaster Coat	Good	~30 m ²	No	A	HW-05	OESN 2009	4% Chrysotile
Transite Wall Panels	Good to fair	~10,910 m ²	No	A	HW-06	OESN 2009	20% Chrysotile
2' x 2' Transite Dot Ceiling Tile	Good	~2,575 m ²	No	C	HC-18	OESN 2009	20% Chrysotile
Magblock Pipe Insulation on the Hot Water Heating Return Line	Good	~4,220 linear metres	Yes	B and / or C	HT-02	OESN 2009	15% Chrysotile

Table C.3: Summary of Previously Sampled and Confirmed Asbestos-Containing Materials

Material ⁽¹⁾ Description	Condition	Estimated Quantity ⁽²⁾	Friable (Yes / No)	Accessibility ⁽³⁾	Homogeneous Group / Material ID (as per historical report source)	Historical Report Source ⁽²⁾	Asbestos Concentration (%) and Type
Insulated Cement Fitting on the Heating System	Good	~136 units	Yes	B and / or C	HT-04	OESN 2009	45% Chrysotile
Parging Cement around Metal Sheet on Wall	Good	< 1 linear metre	Yes	A	HT-05	OESN 2009	45% Chrysotile
Aircell Pipe Insulation on the Domestic Hot Water System	Good	~805 linear metres	Yes	B and / or C	HT-06	OESN 2009	65% Chrysotile
Cardboard Pipe Insulation with Canvas on the Domestic Cold Water System	Good	~1,100 linear metres	Yes	B and / or C	HT-07	OESN 2009	25% - 50% Chrysotile
White Block Tank Insulation (Lower Tanks and Pressure Release Tanks)	Fair to worn	~75 m ²	Yes	B	HT-10	OESN 2009	45% Chrysotile

Table C.3: Summary of Previously Sampled and Confirmed Asbestos-Containing Materials

Material ⁽¹⁾ Description	Condition	Estimated Quantity ⁽²⁾	Friable (Yes / No)	Accessibility ⁽³⁾	Homogeneous Group / Material ID (as per historical report source)	Historical Report Source ⁽²⁾	Asbestos Concentration (%) and Type
Canvas with Black Paper and Parging Cement over Fibreglass Duct	Good to fair	~600 m ²	Yes	B	HT-11	OESN 2009	45% - 65% Chrysotile
Vibration Gasket – HVAC Fan Unit	Fair to worn	~38 units	No	B	HT-13	OESN 2009	70% Chrysotile
Internal Paper from Fire Door	Not directly observed	~41 units	Yes	A	HT-14	OESN 2009	65% Chrysotile
Parging Cement from Air Line Ends	Good to fair	< 0.5 m ²	Yes	B and / or C	HT-15	OESN 2009	55% Chrysotile
Insulated Cement Fitting on the Hot Water Heating Supply	Good	~481 units	Yes	B and / or C	HT-16	OESN 2009	35% Chrysotile

Table C.3: Summary of Previously Sampled and Confirmed Asbestos-Containing Materials

Material ⁽¹⁾ Description	Condition	Estimated Quantity ⁽²⁾	Friable (Yes / No)	Accessibility ⁽³⁾	Homogeneous Group / Material ID (as per historical report source)	Historical Report Source ⁽²⁾	Asbestos Concentration (%) and Type
Insulated Cement Fitting on the Domestic Hot Water Line	Good	~176 units	Yes	B and / or C	HT-17	OESN 2009	60% Chrysotile
Insulated Cement Fitting on the Hot Water Heating Return Line	Good	~444 units	Yes	B and / or C	HT-18	OESN 2009	60% Chrysotile
Insulated Cement Fitting on the Domestic Cold Water Line	Good	~206 units	Yes	B and / or C	HT-19	OESN 2009	35% - 60% Chrysotile
Insulated Cement Fitting on the Low Pressure Steam Line	Good	~278 units	Yes	B and / or C	HT-20	OESN 2009	60% - 65% Chrysotile
Insulated Cement Fitting on the Drain Line System	Good	~136 units	Yes	B and / or C	HT-21	OESN 2009	45% - 60% Chrysotile

Table C.3: Summary of Previously Sampled and Confirmed Asbestos-Containing Materials

Material ⁽¹⁾ Description	Condition	Estimated Quantity ⁽²⁾	Friable (Yes / No)	Accessibility ⁽³⁾	Homogeneous Group / Material ID (as per historical report source)	Historical Report Source ⁽²⁾	Asbestos Concentration (%) and Type
White Block Insulation – Hot Water Tank Insulation	Fair to worn	~165 m ²	Yes	B	HT-22	OESN 2009	15% Amosite and 5% Chrysotile
Debris Located Beside HVAC Unit	Not directly observed	Not directly observed	Not directly observed	B	HT-24	OESN 2009	25% Chrysotile

(1) All materials found to be in likeness to confirmed or presumed ACMs must be handled like ACMs unless otherwise confirmed by laboratory analysis.

(2) Locations and quantities of materials previously sampled and confirmed to be ACMs as per historic reports OESN 2009 and Wood 2018, as described therein.

(3) The accessibility of known ACMs is rated in accordance with the following criteria:

Access (A): Areas of the building within reach (from floor level) of all building users. Includes areas such as gymnasiums, workshops, and storage areas where activities of the building users (for example basketball on gym ceiling) may result in disturbance of ACM not normally within reach from floor level.

Access (B): Frequently entered maintenance areas within reach of maintenance staff, without the need for a ladder. Includes: frequently entered pipe chases, tunnels and service areas or areas within reach from a fixed ladder or catwalk, for example tops of equipment, mezzanines.

Access (C) Exposed: Areas of the building above 8'0" where use of a ladder is required to reach the ACM. Only refers to ACMs that are exposed to view, from the floor or ladder, without removing or opening other building components such as ceiling tiles, or service access doors or hatches. Does not include infrequently-accessed service areas of the building.

Access (C) Concealed: Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems such as a ventilation plenum. Includes rarely-entered crawl spaces, attic spaces, etc. Observations are limited to the extent visible from the access points.

Access (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 ACM. Evaluation of condition and extent of ACM is limited or impossible, depending on the assessor's ability to visually examine the materials in areas rated Access (D).

Table C.4: Summary of Materials Visually Assessed and Sampled for Lead, Arsenic, and Mercury Analysis

Description ⁽¹⁾ / Location of Material	Condition	Observed Estimated Quantity to Be Impacted	Lead (Pb) Conc. (ug/g)	Arsenic (As) Conc. (ug/g)	Mercury (Hg) Conc. (ug/g)	Sample Number	Pb, As, or Hg Containing Material (Yes/No)	Photograph
Classification Criteria			90	50	10			
Glossy white paint – Present on interior walls within Room 1001 and throughout Site	Good	N/A	15	<50 ⁽²⁾	<2	L-001	No	
Matte white paint – Present on walls within Room 1030 and throughout Site	Good	N/A	11	<50	<2	L-002	No	

Table C.4: Summary of Materials Visually Assessed and Sampled for Lead, Arsenic, and Mercury Analysis

Description ⁽¹⁾ / Location of Material	Condition	Observed Estimated Quantity to Be Impacted	Lead (Pb) Conc. (ug/g)	Arsenic (As) Conc. (ug/g)	Mercury (Hg) Conc. (ug/g)	Sample Number	Pb, As, or Hg Containing Material (Yes/No)	Photograph
Classification Criteria			90	50	10			
Orange-red paint – Present on fire safety highlights within Room 1030 and throughout Site	Good	~50 m ²	37,800	<50	<2	L-003	Yes Pb-containing paint	
Yellow trim ceramic tile glazing – Present installed on top of perimeter cinderblock walls along north and south façade within hanger spaces	Good	~35 m ²	94	4	<0.1	L-004	Yes Pb-containing paint	

Table C.4: Summary of Materials Visually Assessed and Sampled for Lead, Arsenic, and Mercury Analysis

Description ⁽¹⁾ / Location of Material	Condition	Observed Estimated Quantity to Be Impacted	Lead (Pb) Conc. (ug/g)	Arsenic (As) Conc. (ug/g)	Mercury (Hg) Conc. (ug/g)	Sample Number	Pb, As, or Hg Containing Material (Yes/No)	Photograph
Classification Criteria			90	50	10			
Blue/grey textured ceramic tile glazing – Present installed on floor of washroom 1123 and select washrooms	Good	N/A	2	<1	<0.1	L-005	No	
Red ceramic tile glazing – Present installed on floor of Rooms 1137, 1138 and 1139	Good to fair	N/A	41	8	<0.1	L-006	No	

Table C.4: Summary of Materials Visually Assessed and Sampled for Lead, Arsenic, and Mercury Analysis

Description ⁽¹⁾ / Location of Material	Condition	Observed Estimated Quantity to Be Impacted	Lead (Pb) Conc. (ug/g)	Arsenic (As) Conc. (ug/g)	Mercury (Hg) Conc. (ug/g)	Sample Number	Pb, As, or Hg Containing Material (Yes/No)	Photograph
Classification Criteria			90	50	10			
Red ceramic tile glazing – Present installed as baseboard trim within Rooms 1137, 1138 and 1139	Good to fair	N/A	25	11	<0.1	L-007	No	
Grey/beige paint – Present on select second floor office walls (Room 2087)	Good to fair	~875 m²	466	<50	<2	L-008	Yes Pb-containing paint	

Table C.4: Summary of Materials Visually Assessed and Sampled for Lead, Arsenic, and Mercury Analysis

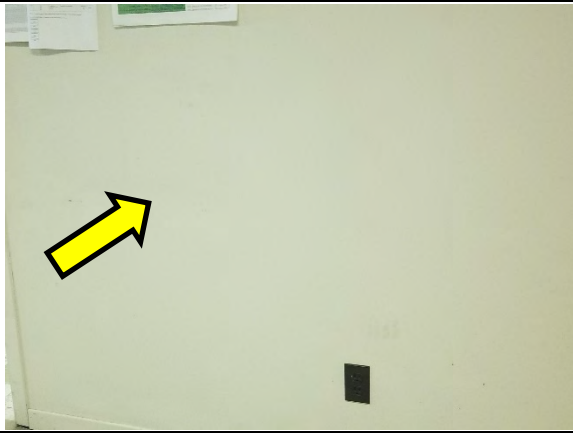
Description ⁽¹⁾ / Location of Material	Condition	Observed Estimated Quantity to Be Impacted	Lead (Pb) Conc. (ug/g)	Arsenic (As) Conc. (ug/g)	Mercury (Hg) Conc. (ug/g)	Sample Number	Pb, As, or Hg Containing Material (Yes/No)	Photograph
Classification Criteria			90	50	10			
Mustard yellow paint – Present on select second floor office walls (Room 2075)	Good	N/A	5	<50	<2	L-009	No	No photograph available ⁽³⁾
Pale beige paint – Present on select second floor office walls (Room 2050E)	Good	N/A	<5	<50	<2	L-010	No	

Table C.4: Summary of Materials Visually Assessed and Sampled for Lead, Arsenic, and Mercury Analysis

Description ⁽¹⁾ / Location of Material	Condition	Observed Estimated Quantity to Be Impacted	Lead (Pb) Conc. (ug/g)	Arsenic (As) Conc. (ug/g)	Mercury (Hg) Conc. (ug/g)	Sample Number	Pb, As, or Hg Containing Material (Yes/No)	Photograph
Classification Criteria			90	50	10			
Off-white paint – Present on wood finishes in second floor storage room (2033)	Good	N/A	<5	<50	<2	L-011	No	

Table C.4: Summary of Materials Visually Assessed and Sampled for Lead, Arsenic, and Mercury Analysis

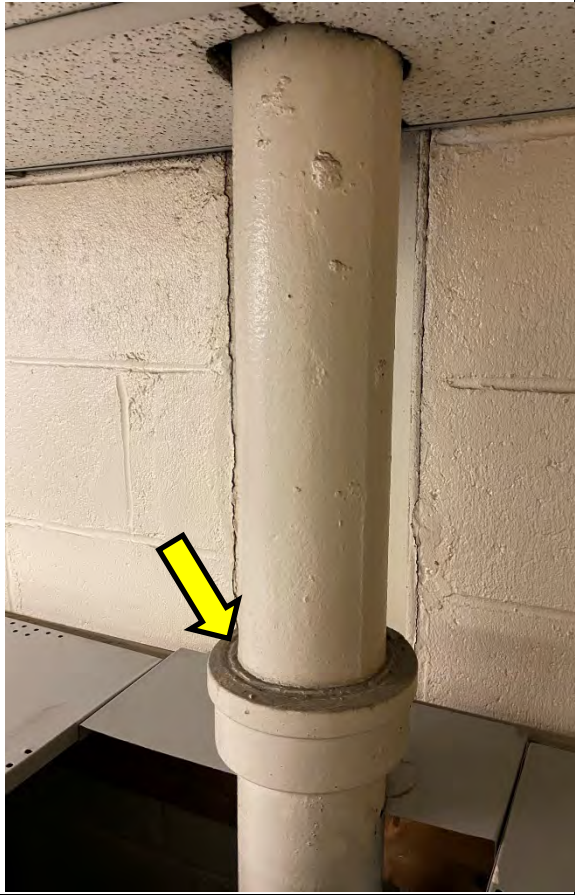
Description ⁽¹⁾ / Location of Material	Condition	Observed Estimated Quantity to Be Impacted	Lead (Pb) Conc. (ug/g)	Arsenic (As) Conc. (ug/g)	Mercury (Hg) Conc. (ug/g)	Sample Number	Pb, As, or Hg Containing Material (Yes/No)	Photograph
Classification Criteria			90	50	10			
Cast iron Bell and Spigot Joint packing material – Present installed throughout the Site	Good	~350 units observed	N/A	N/A	N/A	Material not sampled	Material not sampled, presumed Pb-containing	

Table C.4: Summary of Materials Visually Assessed and Sampled for Lead, Arsenic, and Mercury Analysis

Description ⁽¹⁾ / Location of Material	Condition	Observed Estimated Quantity to Be Impacted	Lead (Pb) Conc. (ug/g)	Arsenic (As) Conc. (ug/g)	Mercury (Hg) Conc. (ug/g)	Sample Number	Pb, As, or Hg Containing Material (Yes/No)	Photograph
Classification Criteria			90	50	10			
Emergency lighting (lead-acid battery) – Present installed throughout the Site	Good	Observed installed throughout Site	N/A	N/A	N/A	Material not sampled	Material not sampled, presumed Pb-containing	

Notes:

- (1) All materials found to be in likeness to confirmed or presumed Pb-, As-, and/or Hg-containing, must be handled as such unless otherwise confirmed by laboratory analysis.
- (2) Less than "<" indicates the concentration of Pb, AS, or Hg within the sampled material is less than Method Detection Limit (MDL) and is not considered to be Pb, As, or Hg, containing material.
- (3) Due to security restrictions at the Site, Golder was not permitted to take electronic devices into select spaces within Building 52. As a result, pictures are unavailable for materials sampled from such restricted spaces.

C.5: Summary of Previously Sampled and Confirmed Lead, Arsenic, and / or Mercury-Containing Materials

Description ⁽¹⁾ of Material / Sample Location	Observed Estimated Quantity To Be Impacted ⁽²⁾	Lead (Pb) Concentration (ug/g)	Arsenic (As) Concentration (ug/g)	Mercury (Hg) Concentration (ug/g)	Sample Number	Historical Report Source	Pb, As, or Hg Containing Material (Yes/No)	Likelihood of Toxic Leachate Pb, As, or Hg (Low / Moderate / High) ⁽³⁾
Classification Criteria		90	50	10				
Pink Paint / Exterior Roof	500 m ²	1,070	<0.5 ⁽⁴⁾	0.491	L1	Wood 2018	Yes (Pb)	Confirmed Lead (34.5 mg/L)
Off-White with Grey Green Base Paint / Wall	2,100 m ²	488	<50	<2	2836-19-Pb01	OESN 2009	Yes (Pb)	Low
Grey Green Paint / Wall	460 m ²	623	<50	<2	2836-19-Pb02	OESN 2009	Yes (Pb)	Low
Medium Green with Bright Orange Base Paint / Door	4 units (doors)	13,400	<50	<2	2836-19-Pb03	OESN 2009	Yes (Pb)	Moderate
Fire Engine Red Paint / Fire Extinguisher Board	235 m ²	204	<50	<2	2836-19-Pb04	OESN 2009	Yes (Pb)	Low
Silver with Yellow Base Paint / Garage Door	2,425 linear metres (piping)	102,000	<50	<2	2836-19-Pb05	OESN 2009	Yes (Pb)	High
White with Cream Base Paint / Walls	185 m ²	78	<50	26	2836-19-Pb06	OESN 2009	Yes (Hg)	High
Cream Paint / Above CT	425 m ²	96	<50	9	2836-19-Pb07	OESN 2009	Yes (Pb)	Moderate
Dark Black Paint / Pipe	385 linear metres (piping)	11,200	<50	2	2836-19-Pb09	OESN 2009	Yes (Pb)	Moderate
Pale Grey with Pale Yellow & Light Blue Base Paint / Wall	18 m ²	189	<50	<2	2836-19-Pb10	OESN 2009	Yes (Pb)	Low
Mint Blue Paint / Conduit off wall	2,000 m ² and 2 units (doors)	256	<50	<2	2836-19-Pb11	OESN 2009	Yes (Pb)	Low
Dark Grey Paint / Floor	5 m ² and 1 unit (door)	1,590	<50	<2	2836-19-Pb12	OESN 2009	Yes (Pb)	Moderate
Steel Grey Paint / Floor	235 m ²	105	<50	<2	2836-19-Pb15	OESN 2009	Yes (Pb)	Low

C.5: Summary of Previously Sampled and Confirmed Lead, Arsenic, and / or Mercury-Containing Materials

Description ⁽¹⁾ of Material / Sample Location	Observed Estimated Quantity To Be Impacted ⁽²⁾	Lead (Pb) Concentration (ug/g)	Arsenic (As) Concentration (ug/g)	Mercury (Hg) Concentration (ug/g)	Sample Number	Historical Report Source	Pb, As, or Hg Containing Material (Yes/No)	Likelihood of Toxic Leachate Pb, As, or Hg (Low / Moderate / High) ⁽³⁾
Classification Criteria		90	50	10				
Fire Engine Red with Medium Green & Grey Base / North Door	4 linear metres (piping) and 4 units (doors)	126	<50	<2	2836-19-Pb19	OESN 2009	Yes (Pb)	Low
Black Paint / Walls and Deck	525 m ² and 20 linear metres (piping)	192	<50	<2	2836-19-Pb20	OESN 2009	Yes (Pb)	Low
Rusty Orange Paint / 1021A	2,380 m ² , 2 units (window frames) and 7 units (doors)	145,000	<50	<2	2836-19-Pb21	OESN 2009	Yes (Pb)	High
Ocean Blue with Navy Blue & White Base Paint / Door and Frame	350 m ² and 12 units (doors)	240	<50	<2	2836-19-Pb22	OESN 2009	Yes (Pb)	Low
Grey Green with Baby Blue and Navy Blue Base paint / Wall	150 m ²	409	<50	<2	2836-19-Pb23	OESN 2009	Yes (Pb)	Moderate
Army Green Paint / Floor	1,185 m ²	2,190	<50	5	2836-19-Pb25	OESN 2009	Yes (Pb)	Moderate
Safety Yellow with Army Green Paint / Floor	255 m ² and 75 linear metres (piping)	79,400	<50	<2	2836-19-Pb27	OESN 2009	Yes (Pb)	High
Dusty Rose with Turquoise Base / Walls	950 m ² , 10 units (doors) and 25 linear metres (piping)	787	<50	<2	2836-19-Pb30	OESN 2009	Yes (Pb)	Moderate
Baby Blue Paint / Radiator and Walls	3,935 m ² and 9 units (doors)	3,090	<50	<2	2836-19-Pb31	OESN 2009	Yes (Pb)	Moderate

C.5: Summary of Previously Sampled and Confirmed Lead, Arsenic, and / or Mercury-Containing Materials

Description ⁽¹⁾ of Material / Sample Location	Observed Estimated Quantity To Be Impacted ⁽²⁾	Lead (Pb) Concentration (ug/g)	Arsenic (As) Concentration (ug/g)	Mercury (Hg) Concentration (ug/g)	Sample Number	Historical Report Source	Pb, As, or Hg Containing Material (Yes/No)	Likelihood of Toxic Leachate Pb, As, or Hg (Low / Moderate / High) ⁽³⁾
Classification Criteria		90	50	10				
Traffic Yellow Paint / Floor	60 m ² and 1 unit (door)	110,000	<50	<2	2836-19-Pb32	OESN 2009	Yes (Pb)	High
Bright Orange Paint / Door	330 m ² and 155 units (doors)	175,000	<50	<2	2836-19-Pb33	OESN 2009	Yes (Pb)	High
Grey-White with Turquoise Base Paint / Doorframe	125 m ²	1,620	<50	5	2836-19-Pb35	OESN 2009	Yes (Pb)	Moderate
Fluorescent Red Paint / Floor	135 m ²	67,400	<50	<2	2836-19-Pb36	OESN 2009	Yes (Pb)	High
Medium Cream with Baby Blue and Yellow Base Paint / Walls	325 m ²	491	<50	<2	2836-19-Pb37	OESN 2009	Yes (Pb)	Moderate
Silver Paint / Above Doorway	95 linear metres (piping)	351	<50	<2	2836-19-Pb38	OESN 2009	Yes (Pb)	Low
Shiny Black Paint / Handrails	60 m ²	2,920	54	<2	2836-19-Pb39	OESN 2009	Yes (Pb and As)	Low
Sky Blue Paint / Wall	910 m ²	583	<50	<2	2836-19-Pb40	OESN 2009	Yes (Pb)	Low
Dark Taupe Paint / Garage Door	6 m ² , 25 units (doors) and 3 units (window frames)	102	<50	<2	2836-19-Pb41	OESN 2009	Yes (Pb)	Low
Dark Blue, Baby Blue, Black with Light Grey Paint / Wall	40 m ²	603	<50	<2	2836-19-Pb44	OESN 2009	Yes (Pb)	Moderate
Light Lemon with Grey Base Paint / Ductwork	6 m ²	719	<50	<2	2836-19-Pb45	OESN 2009	Yes (Pb)	Low
Rose with Mint Green Base Paint / Wall	60 m ²	1,460	<50	<2	2836-19-Pb47	OESN 2009	Yes (Pb)	Moderate
Light Army Grey Paint / Water fountain	1.5 m ²	4,120	<50	<2	2836-19-Pb50	OESN 2009	Yes (Pb)	Low

C.5: Summary of Previously Sampled and Confirmed Lead, Arsenic, and / or Mercury-Containing Materials

Description ⁽¹⁾ of Material / Sample Location	Observed Estimated Quantity To Be Impacted ⁽²⁾	Lead (Pb) Concentration (ug/g)	Arsenic (As) Concentration (ug/g)	Mercury (Hg) Concentration (ug/g)	Sample Number	Historical Report Source	Pb, As, or Hg Containing Material (Yes/No)	Likelihood of Toxic Leachate Pb, As, or Hg (Low / Moderate / High) ⁽³⁾
Classification Criteria		90	50	10				
Off-White with Mint Green Base Paint / Wall	15 m²	1,470	<50	<2	2836-19-Pb53	OESN 2009	Yes (Pb)	Moderate
Off-White with Mint Blue Base Paint / Wall	110 m²	<50	<50	13	2836-19-Pb54	OESN 2009	Yes (Hg)	Low
Lime Green with Light Lime Green Base Paint / Wall	130 m²	2,080	<50	<2	2836-19-Pb55	OESN 2009	Yes (Pb)	Moderate
Slate Grey Paint / Upper Wall	30 m²	547	<50	<2	2836-19-Pb57	OESN 2009	Yes (Pb)	Low
Light Lime Green Paint / Pipe line	125 m²	4,410	<50	2	2836-19-Pb58	OESN 2009	Yes (Pb)	Low
Multi-layer Blue Paint / Wall	300 m²	1,340	<50	<2	2836-19-Pb59	OESN 2009	Yes (Pb)	Moderate
Airforce Blue with Rust Orange Base Paint / North Side Door	4 units (doors)	82,900	<50	<2	2836-19-Pb62	OESN 2009	Yes (Pb)	High
Medium Light Blue Paint / Wall	12 linear metres (piping) and 1 unit (door)	<50	<50	11	2836-19-Pb63	OESN 2009	Yes (Hg)	Low
Fluorescent Orange Paint / Conduit Piping	15 linear metres (piping)	85,300	<50	<2	2836-19-Pb65	OESN 2009	Yes (Pb)	Moderate
Primary Yellow with Multi-layer Blue Base Paint / Wall	45 m²	34,900	<50	<2	2836-19-Pb66	OESN 2009	Yes (Pb)	High

Notes:

(1) All materials found to be in likeness to confirmed or presumed Pb-, As-, Hg-, or Cr-containing materials, must be handled as such unless otherwise confirmed by laboratory analysis.

(2) Locations and quantities of materials previously sampled and confirmed to be ACMs as per historic reports OESN 2009 and Wood 2018, as described therein.

(3) Likelihood of leachate of Pb, As, or Hg has been assumed based on professional experience only, was requested by the Client and considers a combination of: the concentration of hazardous substance (i.e., lead, arsenic, and/or mercury) identified in each paint sample, the substrate materials, surface coating thickness, and paint condition, where available. There is no concentration limit which defines low, medium or high likelihood or industry accepted guidance in this regard. The information from historical reports was relied on and assumed to be accurate for the purposes of the assumptions made. It should be noted that these assumptions must be validated by laboratory TCLP analysis and must not be used to justify the omission of TCLP testing at the time of demolition and waste stream processing. These assumptions have been included in this report at the request of the Client.

(4) Less than "<" indicates the concentration of Pb, As or Hg within the sampled material is less than the applicable Method Detection Limit (MDL).

Table C.6: Summary of Materials Visually Assessed and Sampled for Lead, Arsenic, and Mercury TCLP Analysis

Description / Location of Material	Condition	Lead (Pb) Leachate Conc (mg/L)	Arsenic (As) Leachate Conc (mg/L)	Mercury (Hg) Leachate Conc (mg/L)	Sample Number	Leachate Toxic Waste (Yes/No ⁽²⁾)	Photograph
Leachate Toxic Waste Criteria ⁽¹⁾		5	2.5	0.1			
Orange-red paint – Present on fire safety highlights within Room 1030 and throughout Site	Good	<0.05 ⁽³⁾	N/A ⁽⁴⁾	N/A	L-003	No	
Yellow trim ceramic tile glazing – Present installed on top of perimeter cinderblock walls along north and south façade within hanger spaces	Good	0.16	N/A	N/A	L-004	No	

Table C.6: Summary of Materials Visually Assessed and Sampled for Lead, Arsenic, and Mercury TCLP Analysis

Description / Location of Material	Condition	Lead (Pb) Leachate Conc (mg/L)	Arsenic (As) Leachate Conc (mg/L)	Mercury (Hg) Leachate Conc (mg/L)	Sample Number	Leachate Toxic Waste (Yes/No ⁽²⁾)	Photograph
Leachate Toxic Waste Criteria ⁽¹⁾		5	2.5	0.1			
Grey/beige paint – Present on select second floor office walls (Room 2087)	Good to fair	<0.20	N/A	N/A	L-008	No	

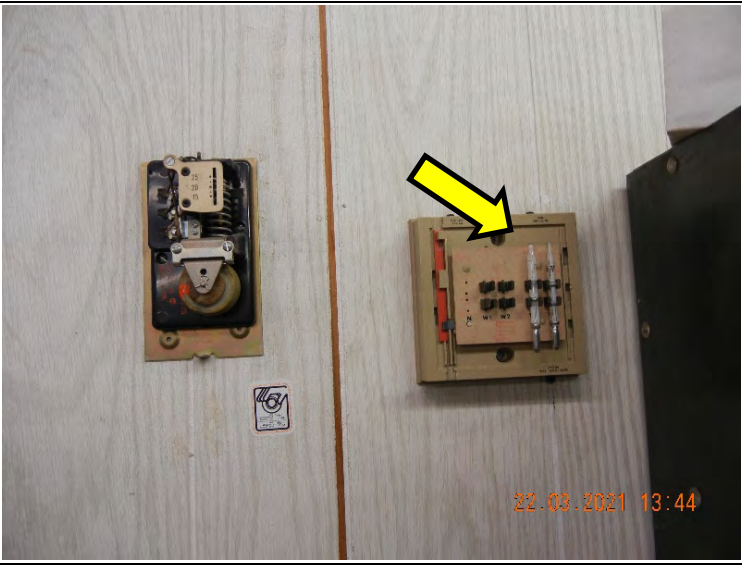
- Notes:
- (1) Leachate Toxic Waste Criteria as specified in O. Reg. 347/90, as amended.
 - (2) TCLP analysis determined leachate concentration to be below the maximum allowable concentration for Pb as prescribed by O. Reg. 347/90, and therefore, can be disposed of as regular construction waste.
 - (3) Less than "<" indicates the concentration of Pb, As, and / or Hg leachate within the sampled material is less than the applicable Method Detection Limit (MDL).
 - (4) Material determined by laboratory analysis to be non Pb-, Cr-, or Hg-containing.

Table C.7: Summary of Materials Sampled and Confirmed for Lead, Arsenic, and Mercury TCLP Analysis

Description ⁽¹⁾ of Material	Lead (Pb) Leachate Conc (mg/L)	Arsenic (As) Leachate Conc (mg/L)	Mercury (Hg) Leachate Conc (mg/L)	Chromium (Cr) Leachate Conc (mg/L)	Sample Number	Historical Report Source ⁽³⁾	Leachate Toxic Waste (Yes/No ⁽⁴⁾)
Leachate Toxic Waste Criteria ⁽²⁾	5	2.5	0.1	5			
Pink Paint (applied to metallic rooftop strut support beams)	34.5	N/A ⁽⁵⁾	<0.00002 ⁽⁶⁾	0.028	L1	Wood 2018	Yes Pb-containing Leachate Toxic Waste

- Notes:
- (1) All materials found to be in likeness to confirmed or presumed Pb-, As-, Hg-, or Cr-containing leachate toxic waste materials, must be handled and disposed of as such unless otherwise confirmed by laboratory analysis.
 - (2) Leachate Toxic Waste Criteria as specified in O. Reg. 347/90, as amended.
 - (3) Locations and quantities of materials previously sampled and confirmed to be ACMs as per historic report Wood 2018, as described therein.
 - (4) TCLP analysis determined leachate concentration to be below the maximum allowable concentration for Pb as prescribed by O. Reg. 347/90, and therefore, can be disposed of as regular construction waste.
 - (5) Material determined by laboratory analysis to be non Pb-, Cr-, or Hg-containing.
 - (6) Less than "<" indicates the concentration of Pb, As or Hg leachate within the sampled material is less than the applicable Method Detection Limit (MDL).

Table C.8: Summary of Materials Visually Assessed for Mercury

Description / Location of Material	Photograph
Fluorescent Light Tubes – Present installed throughout the Site	 A photograph showing two long fluorescent light tubes mounted on a ceiling. A yellow arrow points to the right tube. The ceiling has red metal beams and white pipes. The wall is made of grey concrete blocks. A timestamp '09.02.2021 15:07' is visible in the bottom right corner.
Mercury-Containing Thermostats – Present installed in select rooms throughout the Site	 A photograph of two thermostats mounted on a light-colored wood-paneled wall. A yellow arrow points to the thermostat on the right. The thermostat on the left is a round dial type, and the one on the right is a rectangular electronic type. A timestamp '22.03.2021 13:44' is visible in the bottom right corner.

Description / Location of Material	Photograph
Electrical Switches – Present installed in select rooms throughout the Site	

Table C.9: Summary of Materials Visually Assessed for Ozone-Depleting Substances

Description / Location of Material	Photograph
Refrigerator – Present in select office and dining spaces throughout the Site	
Air Conditioner Unit – Observed in barbershop and select perimeter office spaces	

Table C.10: Summary of Materials Visually Assessed for Polychlorinated Biphenyls

Description / Location of Material	Photograph
Light Fixture Ballasts – Present installed throughout the Site	

Description / Location of Material	Photograph
Electrical Transformers – Present installed in electrical rooms throughout the Site	

APPENDIX D

Laboratory Test Reports



EMSL Canada Inc.

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EMSL Canada Order 672100290
Customer ID: 55GOLA78
Customer PO:
Project ID:

Attn: Gregory Katsuno
Golder Associates, Ltd.
1931 Robertson Road
Ottawa, ON K2H 5B7

Phone: (613) 592-9600
Fax: (613) 592-9601
Collected: 2/ 9/2022
Received: 2/22/2021
Analyzed: 3/01/2021

Proj: 20442331

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

Client Sample ID: A-002A **Lab Sample ID:** 672100290-0001

Sample Description: Navy Vinyl Baseboard/Tan mastic

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Brown/Tan	8.0%	92.0%	None Detected	

Client Sample ID: A-002B **Lab Sample ID:** 672100290-0002

Sample Description: Navy Vinyl Baseboard/Tan mastic

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Brown/Tan/Green	4.0%	96.0%	None Detected	

Client Sample ID: A-002C **Lab Sample ID:** 672100290-0003

Sample Description: Navy Vinyl Baseboard/Tan mastic

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Brown/Tan	7.0%	93.0%	None Detected	

Client Sample ID: A-005A **Lab Sample ID:** 672100290-0004

Sample Description: Grey Vinyl Baseboard/Yellow/tan mastic

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Tan/White	3.0%	97.0%	None Detected	

Client Sample ID: A-005B **Lab Sample ID:** 672100290-0005

Sample Description: Grey Vinyl Baseboard/Yellow/tan mastic

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Tan/White	3.0%	97.0%	None Detected	

Client Sample ID: A-005C **Lab Sample ID:** 672100290-0006

Sample Description: Grey Vinyl Baseboard/Yellow/tan mastic

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Tan	9.0%	91.0%	None Detected	

Client Sample ID: A-010A **Lab Sample ID:** 672100290-0007

Sample Description: Utility Space Walls and Penetrations/Yellow mastic

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Yellow	4.0%	96.0%	None Detected	



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Customer ID: 55GOLA78
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Project ID:

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

Client Sample ID: A-010B **Lab Sample ID:** 672100290-0008
Sample Description: Utility Space Walls and Penetrations/Yellow mastic

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Yellow	3.0%	97.0%	None Detected	

Client Sample ID: A-010C **Lab Sample ID:** 672100290-0009
Sample Description: Utility Space Walls and Penetrations/Yellow mastic

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Yellow	3.0%	97.0%	None Detected	

Client Sample ID: A-011A **Lab Sample ID:** 672100290-0010
Sample Description: Cinderblock mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray/Green	0.0%	100.0%	None Detected	

Client Sample ID: A-011B **Lab Sample ID:** 672100290-0011
Sample Description: Cinderblock mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	3.0%	97.0%	None Detected	

Client Sample ID: A-011C **Lab Sample ID:** 672100290-0012
Sample Description: Cinderblock mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	White	3.0%	97.0%	None Detected	

Client Sample ID: A-011D **Lab Sample ID:** 672100290-0013
Sample Description: Cinderblock mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray/White	3.0%	97.0%	None Detected	

Client Sample ID: A-011E **Lab Sample ID:** 672100290-0014
Sample Description: Cinderblock mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray/Blue	3.0%	97.0%	None Detected	

Client Sample ID: A-011F **Lab Sample ID:** 672100290-0015
Sample Description: Cinderblock mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	3.0%	97.0%	None Detected	



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

Client Sample ID: A-011G **Lab Sample ID:** 672100290-0016
Sample Description: Cinderblock mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	2.0%	98.0%	None Detected	

Client Sample ID: A-012A **Lab Sample ID:** 672100290-0017
Sample Description: Brick mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A-012B **Lab Sample ID:** 672100290-0018
Sample Description: Brick mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray/White	3.0%	97.0%	None Detected	

Client Sample ID: A-012C **Lab Sample ID:** 672100290-0019
Sample Description: Brick mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray/White/Green	3.0%	97.0%	None Detected	

Client Sample ID: A-012D **Lab Sample ID:** 672100290-0020
Sample Description: Brick mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray/White	3.0%	97.0%	None Detected	

Client Sample ID: A-012E **Lab Sample ID:** 672100290-0021
Sample Description: Brick mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray/Blue	0.0%	100.0%	None Detected	

Client Sample ID: A-012F **Lab Sample ID:** 672100290-0022
Sample Description: Brick mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray/Blue	3.0%	97.0%	None Detected	

Client Sample ID: A-012G **Lab Sample ID:** 672100290-0023
Sample Description: Brick mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray/White	3.0%	97.0%	None Detected	



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

Client Sample ID: A-013A **Lab Sample ID:** 672100290-0024

Sample Description: 1' x 1' white with grey vinyl floor tiles

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	White	3.0%	97.0%	None Detected	

Client Sample ID: A-013B **Lab Sample ID:** 672100290-0025

Sample Description: 1' x 1' white with grey vinyl floor tiles

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray/White	3.0%	97.0%	None Detected	

Client Sample ID: A-013C **Lab Sample ID:** 672100290-0026

Sample Description: 1' x 1' white with grey vinyl floor tiles

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray/White	3.0%	97.0%	None Detected	

Client Sample ID: A-014A **Lab Sample ID:** 672100290-0027

Sample Description: Black Mastic

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Black	11.0%	89.0%	None Detected	

Client Sample ID: A-014B **Lab Sample ID:** 672100290-0028

Sample Description: Black Mastic

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Black	8.0%	92.0%	None Detected	

Client Sample ID: A-014C **Lab Sample ID:** 672100290-0029

Sample Description: Black Mastic

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Black	6.0%	94.0%	None Detected	

Client Sample ID: A-015A **Lab Sample ID:** 672100290-0030

Sample Description: 1' x 1' blue with white streaks vinyl floor tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	3.0%	97.0%	None Detected	

Client Sample ID: A-015B **Lab Sample ID:** 672100290-0031

Sample Description: 1' x 1' blue with white streaks vinyl floor tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	3.0%	97.0%	None Detected	



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Client Sample ID: A-015C **Lab Sample ID:** 672100290-0032
Sample Description: 1' x 1' blue with white streaks vinyl floor tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	3.0%	97.0%	None Detected	

Client Sample ID: A-017A **Lab Sample ID:** 672100290-0033
Sample Description: Red ceramic tiling/Dark grey mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Black	3.0%	97.0%	None Detected	

Client Sample ID: A-017B **Lab Sample ID:** 672100290-0034
Sample Description: Red ceramic tiling/Dark grey mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	3.0%	97.0%	None Detected	

Client Sample ID: A-017C **Lab Sample ID:** 672100290-0035
Sample Description: Red ceramic tiling/Dark grey mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Black	3.0%	97.0%	None Detected	

Client Sample ID: A-018A **Lab Sample ID:** 672100290-0036
Sample Description: Light grey caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A-018B **Lab Sample ID:** 672100290-0037
Sample Description: Light grey caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	2.0%	98.0%	None Detected	

Client Sample ID: A-018C **Lab Sample ID:** 672100290-0038
Sample Description: Light grey caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	2.0%	98.0%	None Detected	

Client Sample ID: A-019A **Lab Sample ID:** 672100290-0039
Sample Description: Grey parging cement firestop

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	3.0%	97.0%	None Detected	



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

Client Sample ID: A-019B **Lab Sample ID:** 672100290-0040

Sample Description: Grey parging cement firestop

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Tan	3.0%	97.0%	None Detected	

Client Sample ID: A-019C **Lab Sample ID:** 672100290-0041

Sample Description: Grey parging cement firestop

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	6.0%	94.0%	None Detected	

Client Sample ID: A-023A **Lab Sample ID:** 672100290-0042

Sample Description: Interior Windows/Grey window caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	3.0%	97.0%	None Detected	

Client Sample ID: A-023B **Lab Sample ID:** 672100290-0043

Sample Description: Interior Windows/Grey window caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	3.0%	97.0%	None Detected	

Client Sample ID: A-023C **Lab Sample ID:** 672100290-0044

Sample Description: Interior Windows/Grey window caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	5.0%	95.0%	None Detected	

Client Sample ID: A-026A **Lab Sample ID:** 672100290-0045

Sample Description: Exterior Perimeter Transite Seams/Light grey caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A-026B **Lab Sample ID:** 672100290-0046

Sample Description: Exterior Perimeter Transite Seams/Light grey caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	3.0%	97.0%	None Detected	

Client Sample ID: A-026C **Lab Sample ID:** 672100290-0047

Sample Description: Exterior Perimeter Transite Seams/Light grey caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	1.0%	99.0%	None Detected	



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

Client Sample ID: A-027A **Lab Sample ID:** 672100290-0048

Sample Description: Exterior Perimeter Select Doors/Blue/grey caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray/Blue	0.0%	100.0%	None Detected	

Client Sample ID: A-027B **Lab Sample ID:** 672100290-0049

Sample Description: Exterior Perimeter Select Doors/Blue/grey caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray/Blue	0.0%	100.0%	None Detected	

Client Sample ID: A-027C **Lab Sample ID:** 672100290-0050

Sample Description: Exterior Perimeter Select Doors/Blue/grey caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray/Blue	0.0%	100.0%	None Detected	

Client Sample ID: A-028A **Lab Sample ID:** 672100290-0051

Sample Description: Exterior Perimeter Select Doors under A-027/Black caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: A-028B **Lab Sample ID:** 672100290-0052

Sample Description: Exterior Perimeter Select Doors under A-027/Black caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: A-028C **Lab Sample ID:** 672100290-0053

Sample Description: Exterior Perimeter Select Doors under A-027/Black caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: A-029A **Lab Sample ID:** 672100290-0054

Sample Description: Exterior Select Penetrations/White/grey caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray/White	0.0%	100.0%	None Detected	

Client Sample ID: A-029B **Lab Sample ID:** 672100290-0055

Sample Description: Exterior Select Penetrations/White/grey caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray/White	0.0%	100.0%	None Detected	



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 Project ID:

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

Client Sample ID: A-029C **Lab Sample ID:** 672100290-0056
Sample Description: Exterior Select Penetrations/White/grey caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray/White	0.0%	100.0%	None Detected	

Client Sample ID: A-030A **Lab Sample ID:** 672100290-0057
Sample Description: Exterior/Corrugated Transite Panels

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	0.0%	85.0%	15% Chrysotile	

Client Sample ID: A-030B **Lab Sample ID:** 672100290-0058
Sample Description: Exterior/Corrugated Transite Panels

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021				Positive Stop (Not Analyzed)	

Client Sample ID: A-030C **Lab Sample ID:** 672100290-0059
Sample Description: Exterior/Corrugated Transite Panels

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021				Positive Stop (Not Analyzed)	

Client Sample ID: A-033A **Lab Sample ID:** 672100290-0060
Sample Description: Hangers and Exterior/Flat Transite Panels

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray/White	0.0%	78.0%	22% Chrysotile	

Client Sample ID: A-033B **Lab Sample ID:** 672100290-0061
Sample Description: Hangers and Exterior/Flat Transite Panels

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021				Positive Stop (Not Analyzed)	

Client Sample ID: A-033C **Lab Sample ID:** 672100290-0062
Sample Description: Hangers and Exterior/Flat Transite Panels

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021				Positive Stop (Not Analyzed)	

Client Sample ID: A-034A **Lab Sample ID:** 672100290-0063
Sample Description: Interior Construction Seams/White firestop caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	White	0.0%	100.0%	None Detected	



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

Client Sample ID: A-034B **Lab Sample ID:** 672100290-0064

Sample Description: Interior Construction Seams/White firestop caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	White	0.0%	100.0%	None Detected	

Client Sample ID: A-034C **Lab Sample ID:** 672100290-0065

Sample Description: Interior Construction Seams/White firestop caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	White	0.0%	100.0%	None Detected	

Client Sample ID: A-035A **Lab Sample ID:** 672100290-0066

Sample Description: Select Hanger Transite Seams/Grey caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray/Tan	0.0%	97.0%	3% Chrysotile	Transite material stuck to surface not included in analysis.

Client Sample ID: A-035B **Lab Sample ID:** 672100290-0067

Sample Description: Select Hanger Transite Seams/Grey caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021				Positive Stop (Not Analyzed)	

Client Sample ID: A-035C **Lab Sample ID:** 672100290-0068

Sample Description: Select Hanger Transite Seams/Grey caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021				Positive Stop (Not Analyzed)	

Client Sample ID: A-036A **Lab Sample ID:** 672100290-0069

Sample Description: Grey vinyl floor tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A-036B **Lab Sample ID:** 672100290-0070

Sample Description: Grey vinyl floor tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A-036C **Lab Sample ID:** 672100290-0071

Sample Description: Grey vinyl floor tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	0.0%	100.0%	None Detected	



EMSL Canada Inc.

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Phone/Fax: (343) 882-6076 / (343) 882-6077
<http://www.EMSL.com> / ottawalab@EMSL.com

EMSL Canada Order 672100290
Customer ID: 55GOLA78
Customer PO:
Project ID:

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

Client Sample ID: A-037A **Lab Sample ID:** 672100290-0072
Sample Description: Black/tar mastic associated with A-036

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Brown	0.0%	100.0%	None Detected	

Client Sample ID: A-037B **Lab Sample ID:** 672100290-0073
Sample Description: Black/tar mastic associated with A-036

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Brown	0.0%	100.0%	None Detected	

Client Sample ID: A-037C **Lab Sample ID:** 672100290-0074
Sample Description: Black/tar mastic associated with A-036

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Brown	0.0%	100.0%	None Detected	

Client Sample ID: A-038A **Lab Sample ID:** 672100290-0075
Sample Description: Visually Distinct Exterior Patch S Façade/Grey cinderblock mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A-038B **Lab Sample ID:** 672100290-0076
Sample Description: Visually Distinct Exterior Patch S Façade/Grey cinderblock mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A-038C **Lab Sample ID:** 672100290-0077
Sample Description: Visually Distinct Exterior Patch S Façade/Grey cinderblock mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/01/2021	Gray	0.0%	100.0%	None Detected	



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Phone/Fax: (343) 882-6076 / (343) 882-6077
<http://www.EMSL.com> / ottawalab@EMSL.com

EMSL Canada Order 672100290
Customer ID: 55GOLA78
Customer PO:
Project ID:

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

Analyst(s):

Jimmy Encalada PLM (47)
Steve Juszczak PLM (24)

Reviewed and approved by:

Simon Parent, Laboratory Manager
or Other Approved Signatory

None Detected = <0.1%. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted. This report must not be used to claim product endorsement by NVLAP of any agency or the U.S. Government

Samples analyzed by EMSL Analytical, Inc. Carle Place, NY NVLAP Lab Code 101048-10, CA ELAP 2339, NYS ELAP 11469

Initial report from: 03/01/2021 15:33:56



EMSL ANALYTICAL, INC.
LABORATORY PRODUCTS TRAINING

Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

672100290

B52

EMSL Analytical, Inc.

Suite 102

22 Antares Drive

Ottawa, ON K2E7Z6

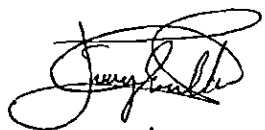
PHONE: 343-882-6076

FAX: 343-882-6077

Company Name: Golder Associates Ltd.		EMSL Customer ID:	
Street: 1931 Robertson Road		City: Ottawa	State/Province: ON
Zip/Postal Code: K2H 5B7	Country: CA	Telephone #: (613) 592-9600	Fax #: (613) 592-9601
Report To (Name): Gregory Katsuno / Patrick Moullos		Please Provide Results: ☐ Fax ☒ Email	
Email Address: gkatsuno@golder.com / PMoullos@golder.com		Purchase Order:	
Project Name/Number: 20442331		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: ON		CT Samples: ☐ Commercial/Taxable ☐ Residential/Tax Exempt	
EMSL-Bill to: ☒ Same ☐ Different - If Bill to is Different note instructions in Comments** Third Party Billing requires written authorization from third party			
Turnaround Time (TAT) Options* - Please Check			
☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week			
*For TEM Air 3 hr through 6 hr, please call ahead to schedule. There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.			
PCM - Air ☐ Check if samples are from NY ☐ NIOSH 7400 ☐ w/ OSHA 8hr. TWA PLM - Bulk (reporting limit) (<0.5%) ☒ PLM EPA 600/R-93/116 (<1%) ☐ PLM EPA NOB (<1%) Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%) Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%) ☐ NYS 198.1 (friable in NY) ☐ NYS 198.6 NOB (non-friable-NY) ☐ NYS 198.8 SOF-V ☐ NIOSH 9002 (<1%)		TEM - Air ☐ 4-4.5hr TAT (AHERA only) ☐ AHERA 40 CFR, Part 763 ☐ NIOSH 7402 ☐ EPA Level II ☐ ISO 10312 TEM - Bulk ☐ TEM EPA NOB ☐ NYS NOB 198.4 (non-friable-NY) ☐ Chatfield SOP ☐ TEM Mass Analysis-EPA 600 sec. 2.5 TEM - Water: EPA 100.2 Fibers >10µm ☐ Waste ☐ Drinking All Fiber Sizes ☐ Waste ☐ Drinking	
TEM - Dust ☐ Microvac - ASTM D 5755 ☐ Wipe - ASTM D6480 ☐ Carpet Sonication (EPA 600/J-93/167) Soil/Rock/Vermiculite ☐ PLM EPA 600/R-93/116 with milling prep (<1%) ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%) ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%) ☐ TEM Qualitative via Filtration Prep ☐ TEM Qualitative via Drop Mount Prep ☐ Cincinnati Method EPA 600/R-04/004 - PLM/TEM (BC only) Other: ☐			
☒ Check For Positive Stop - Clearly Identify Homogenous Group		Filter Pore Size (Air Samples): ☐ 0.8µm ☐ 0.45µm	
Samplers Name: G. Katsuno		Samplers Signature: <i>G. Katsuno</i>	
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	Please see attached sample inventory		
Client Sample # (s):		Total # of Samples: 77	
Relinquished (Client): G. Katsuno		Date: Feb 22/21	Time: 16:15
Received (Lab): Ottawa Dropbox 2N		Date: 02/22/21	Time: 4:30
Comments/Special Instructions: - please analyze requested layer only; if multiple inseparable layers please homogenize and treat as single material			

Page 1 of 2 pages

Sample #	Sample Description	Date Sampled
⊕ A-002A to C	Tan mastic (Navy vinyl baseboard)	Feb9-2021
⊕ A-005A to C	Yellow/tan mastic (Grey vinyl baseboard)	Feb9-2021
⊕ A-010A to C	Yellow mastic (utility space walls and penetrations)	Feb9-2021
⊕ A-011A to G	Cinderblock mortar	Feb9-2021
⊕ A-012A to G	Brick mortar	Feb9-2021
⊕ A-013A to C	1' x 1' white w/ grey vinyl floor tiles	Feb10-2021
⊕ A-014A to C	Black mastic (associated w/ A-013)	Feb10-2021
⊕ A-015A to C	1' x 1' blue w/ white streaks vinyl floor tiles	Feb10-2021
⊕ A-017A to C	Dark grey mortar (red ceramic tiling)	Feb10-2021
⊕ A-018A to C	Light grey caulking	Feb10-2021
⊕ A-019A to C	Grey parging cement firestop	Feb12-2021
⊕ A-023A to C	Grey window caulking (interior windows)	Feb12-2021
⊕ A-026A to C	Light grey caulking (ext. perimeter transite seams)	Feb12-2021
⊕ A-027A to C	Blue/grey caulking (ext. perimeter select doors)	Feb12-2021
⊕ A-028A to C	Black caulking (ext. perimeter select doors under A-027)	Feb12-2021
⊕ A-029A to C	White/grey caulking (ext. select penetrations)	Feb12-2021
⊕ A-030A to C	Corrugated Transite Panels (ext.)	Feb12-2021
⊕ A-033A to C	Flat Transite Panels (Hangers and ext.)	Feb12-2021
⊕ A-034A to C	White firestop caulking (int. construction seams)	Feb12-2021
⊕ A-035A to C	Grey caulking (select Hanger Transite seams)	Feb12-2021
⊕ A-036A to C	Grey vinyl floor tile	Feb12-2021
⊕ A-037A to C	Brown/tan mastic associated w/ A-036	Feb12-2021
⊕ A-038A to C	Grey cinderblock mortar (visually distinct ext. patch S façade)	Feb12-2021



3/1/21

2:52 PM

Pg 2 of 2

J 3/1/21 2:51 PM



EMSL Canada Inc.

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

EMSL Canada Order 672100558
 Customer ID: 55GOLA78
 Customer PO:
 Project ID:

Attn: Gregory Katsuno
 Golder Associates, Ltd.
 1931 Robertson Road
 Ottawa, ON K2H 5B7

Phone: (613) 592-9600
Fax: (613) 592-9601
Collected: 3/24/2021
Received: 3/29/2021
Analyzed: 4/05/2021

Proj: 20442331

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

Client Sample ID: A-039A **Lab Sample ID:** 672100558-0001

Sample Description: 2F mechanical spaces/Black HVAC Expansion Flex Joint

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	4/05/2021	Black	20.0%	80.0%	None Detected	

Client Sample ID: A-039B **Lab Sample ID:** 672100558-0002

Sample Description: 2F mechanical spaces/Black HVAC Expansion Flex Joint

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	4/05/2021	Black	20.0%	80.0%	None Detected	

Client Sample ID: A-039C **Lab Sample ID:** 672100558-0003

Sample Description: 2F mechanical spaces/Black HVAC Expansion Flex Joint

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	4/05/2021	Black	20.0%	80.0%	None Detected	

Client Sample ID: A-041A **Lab Sample ID:** 672100558-0004

Sample Description: Above dot ceilings, Rm2108/Grey putty

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	4/05/2021	Gray	0.0%	94.0%	6% Chrysotile	

Client Sample ID: A-041B **Lab Sample ID:** 672100558-0005

Sample Description: Above dot ceilings, Rm2108/Grey putty

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	4/05/2021				Positive Stop (Not Analyzed)	

Client Sample ID: A-041C **Lab Sample ID:** 672100558-0006

Sample Description: Above dot ceilings, Rm2108/Grey putty

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	4/05/2021				Positive Stop (Not Analyzed)	

Client Sample ID: A-042A **Lab Sample ID:** 672100558-0007

Sample Description: Ext. B52 envelope S façade opening/Black tar paper layer

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	4/05/2021	White/Black/Yellow	25.0%	73.0%	2% Chrysotile	All layers of this sample included in the results at clients request



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<http://www.EMSL.com> / ottawalab@EMSL.com

EMSL Canada Order 672100558
Customer ID: 55GOLA78
Customer PO:
Project ID:

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

Client Sample ID: A-042B

Lab Sample ID: 672100558-0008

Sample Description: Ext. B52 envelope S façade opening/Black tar paper layer

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	4/05/2021					Positive Stop (Not Analyzed)

Client Sample ID: A-042C

Lab Sample ID: 672100558-0009

Sample Description: Ext. B52 envelope S façade opening/Black tar paper layer

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	4/05/2021					Positive Stop (Not Analyzed)

Client Sample ID: A-043A

Lab Sample ID: 672100558-0010

Sample Description: 2F ductwork/Dark grey duct joint caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	4/05/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A-043B

Lab Sample ID: 672100558-0011

Sample Description: 2F ductwork/Dark grey duct joint caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	4/05/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A-043C

Lab Sample ID: 672100558-0012

Sample Description: 2F ductwork/Dark grey duct joint caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	4/05/2021	Gray	0.0%	100.0%	None Detected	

Analyst(s):

Ewa Krupinska PLM (2)
Simon Parent PLM (6)

Reviewed and approved by:

Simon Parent, Laboratory Manager
or Other Approved Signatory

None Detected = <0.1%. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted. This report must not be used to claim product endorsement by NVLAP of any agency or the U.S. Government

Samples analyzed by EMSL Canada Inc. Ottawa, ON NVLAP Lab Code 201040-0

(Initial report from: 04/05/2021 14:01:38)



EMSL ANALYTICAL INC.
LABORATORY PRODUCTS TRAINING

Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

672100558

B52

EMSL Analytical, Inc.

Suite 102

22 Antares Drive

Ottawa, ON K2E7Z6

PHONE: 343-882-6076

FAX: 343-882-6077

Company Name : Golder Associates Ltd.		EMSL Customer ID:	
Street: 1931 Robertson Road		City: Ottawa	State/Province: ON
Zip/Postal Code: K2H 5B7	Country: CA	Telephone #: (613) 592-9600	Fax #: (613) 592-9601
Report To (Name): Gregory Katsuno / Patrick Moullos / Tim Seabert		Please Provide Results: ☐ Fax ☒ Email	
Email Address: gkatsuno@golder.com / PMoullos@golder.com		Purchase Order:	
Project Name/Number: 20442331		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: ON		CT Samples: ☐ Commercial/Taxable ☐ Residential/Tax Exempt	
EMSL-Bill to: ☒ Same ☐ Different - If Bill to is Different note instructions in Comments**			
Third Party Billing requires written authorization from third party			
Turnaround Time (TAT) Options* - Please Check			
☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week			
*For TEM Air 3 hr through 6 hr, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.			
PCM - Air ☐ Check if samples are from NY ☐ NIOSH 7400 ☐ w/ OSHA 8hr. TWA PLM - Bulk (reporting limit) (<0.5%) ☒ PLM EPA 600/R-93/116 (<1%) ☐ PLM EPA NOB (<1%) Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%) Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%) ☐ NYS 198.1 (friable in NY) ☐ NYS 198.6 NOB (non-friable-NY) ☐ NYS 198.8 SOF-V ☐ NIOSH 9002 (<1%)		TEM - Air ☐ 4-4.5hr TAT (AHERA only) ☐ AHERA 40 CFR, Part 763 ☐ NIOSH 7402 ☐ EPA Level II ☐ ISO 10312 TEM - Bulk ☐ TEM EPA NOB ☐ NYS NOB 198.4 (non-friable-NY) ☐ Chatfield SOP ☐ TEM Mass Analysis-EPA 600 sec. 2.5 TEM - Water: EPA 100.2 Fibers >10µm ☐ Waste ☐ Drinking All Fiber Sizes ☐ Waste ☐ Drinking	
TEM- Dust ☐ Microvac - ASTM D 5755 ☐ Wipe - ASTM D6480 ☐ Carpet Sonication (EPA 600/J-93/167) Soil/Rock/Vermiculite ☐ PLM EPA 600/R-93/116 with milling prep (<1%) ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%) ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%) ☐ TEM Qualitative via Filtration Prep ☐ TEM Qualitative via Drop Mount Prep ☐ Cincinnati Method EPA 600/R-04/004 - PLM/TEM (BC only) Other: ☐			
☒ Check For Positive Stop - Clearly Identify Homogenous Group		Filter Pore Size (Air Samples): ☐ 0.8µm ☐ 0.45µm	
Samplers Name: Gregory Katsuno		Samplers Signature:	
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	PLEASE REFER TO ATTACHED COC SAMPLE INVENTORY		
Client Sample # (s): -		Total # of Samples: 12	
Relinquished (Client): GREGORY KATSUNO		Date: Mar 26, 2021	Time: 14:45
Received (Lab): Ottawa Centre		Date: 3/29/21	Time: 11:30 AM
Comments/Special Instructions: - Please analyze requested layer/material only, if multiple inseparable layers please homogenize and treat as single layer/material.			

Sample #	Sample Description	Date Sampled
PS A-039A to C	Black HVAC Expansion Flex Joint (2F mechanical spaces)	Mar24-2021
PS A-041A to C	Grey putty (above dot ceilings, Rm2108)	Mar24-2021
PS A-042A to C	Black tar paper layer (ext. B52 envelope S façade opening)	Mar24-2021
PS A-043A to C	Dark grey duct joint caulking (2F ductwork)	Mar24-2021

Certificate of Analysis

Golder Associates Ltd. (Ottawa)

1931 Robertson Rd.
Ottawa, ON K2H 5B7
Attn: Tim Seabert

Client PO:
Project: 20442331
Custody:

Report Date: 1-Mar-2021
Order Date: 22-Feb-2021

Order #: 2109191

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2109191-01	L-001
2109191-02	L-002
2109191-03	L-003
2109191-04	L-004
2109191-05	L-005
2109191-06	L-006
2109191-07	L-007
2109191-08	L-008
2109191-09	L-009

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 01-Mar-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 22-Feb-2021

Client PO:

Project Description: 20442331

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Mercury by CVAA	EPA 7471B - CVAA, digestion	25-Feb-21	25-Feb-21
Metals, ICP-MS	EPA 6020 - Digestion - ICP-MS	25-Feb-21	25-Feb-21
Solids, %	Gravimetric, calculation	24-Feb-21	24-Feb-21

Certificate of Analysis

Report Date: 01-Mar-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 22-Feb-2021

Client PO:

Project Description: 20442331

	Client ID:	L-001	L-002	L-003	L-004
	Sample Date:	09-Feb-21 00:00	09-Feb-21 00:00	09-Feb-21 00:00	10-Feb-21 00:00
	Sample ID:	2109191-01	2109191-02	2109191-03	2109191-04
	MDL/Units	Paint	Paint	Paint	Other

Physical Characteristics

% Solids	0.1 % by Wt.	-	-	-	100
----------	--------------	---	---	---	-----

Metals

Arsenic	50 ug/g	<50	<50	<50	-
Arsenic	1 ug/g dry	-	-	-	4
Lead	5 ug/g	15	11	37800	-
Lead	1 ug/g dry	-	-	-	94
Mercury	2 ug/g	<2	<2	<2	-
Mercury	0.1 ug/g dry	-	-	-	<0.1

	Client ID:	L-005	L-006	L-007	L-008
	Sample Date:	10-Feb-21 00:00	10-Feb-21 00:00	10-Feb-21 00:00	12-Feb-21 00:00
	Sample ID:	2109191-05	2109191-06	2109191-07	2109191-08
	MDL/Units	Other	Other	Other	Paint

Physical Characteristics

% Solids	0.1 % by Wt.	100	100	100	-
----------	--------------	-----	-----	-----	---

Metals

Arsenic	50 ug/g	-	-	-	<50
Arsenic	1 ug/g dry	<1	8	11	-
Lead	5 ug/g	-	-	-	466
Lead	1 ug/g dry	2	41	25	-
Mercury	2 ug/g	-	-	-	<2
Mercury	0.1 ug/g dry	<0.1	<0.1	<0.1	-

	Client ID:	L-009	-	-	-
	Sample Date:	12-Feb-21 00:00	-	-	-
	Sample ID:	2109191-09	-	-	-
	MDL/Units	Paint	-	-	-

Metals

Arsenic	50 ug/g	<50	-	-	-
Lead	5 ug/g	5	-	-	-
Mercury	2 ug/g	<2	-	-	-

Certificate of Analysis

Report Date: 01-Mar-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 22-Feb-2021

Client PO:

Project Description: 20442331

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Arsenic	ND	1	ug/g						
Lead	ND	1	ug/g						
Mercury	ND	0.1	ug/g						

Certificate of Analysis

Report Date: 01-Mar-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 22-Feb-2021

Client PO:

Project Description: 20442331

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Arsenic	4.0	1	ug/g dry	3.9			3.8	30	
Lead	8.6	1	ug/g dry	8.3			3.0	30	
Mercury	ND	0.1	ug/g dry	ND			NC	30	
Physical Characteristics									
% Solids	89.7	0.1	% by Wt.	89.2			0.6	25	

Certificate of Analysis

Report Date: 01-Mar-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 22-Feb-2021

Client PO:

Project Description: 20442331

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Arsenic	50.6	1	ug/g	1.6	98.0	70-130			
Lead	45.4	1	ug/g	3.3	84.1	70-130			
Mercury	1.55	0.1	ug/g	ND	104	70-130			

Certificate of Analysis

Report Date: 01-Mar-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 22-Feb-2021

Client PO:

Project Description: 20442331

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

Parcel ID: 2109191



RELIABLE.

B52

Head Office
300-2319 St. Laurent Blvd.
Ottawa, Ontario K1G 4J8
p: 1-800-749-1947
e: paracel@paracellabs.com

Chain of Custody
(Lab Use Only)

Page 1 of 2

Client Name: Golder Associates Ltd.	Project Reference: 20442331	Turnaround Time: ☐ 1 Day ☐ 3 Day ☐ 2 Day ☒ Regular Date Required: _____
Contact Name: Gregory Katsuno / Tim Seibert / Patrick Moullos	Quote #	
Address: 1931 Robertson Road, Ottawa, ON, K2H 5B7	PO #	
Telephone: (613) 592-9600	Email Address: GKatsuno@golder.com / Tim.Seibert@golder.com / PMoullos@golder.com	

Criteria: ☐ O. Reg. 153/04 (As Amended) Table ☐ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: _____ ☐ Other: _____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Required Analyses

Parcel Order Number:

2109191

Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken		PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	Lead	Arsenic						
				Date	Time															
1	P	N/A	1			☐	☐	☐	☐	☒	☐	☐	☒	☒	☐	☐	☐	☐	☐	☐
2						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
10						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments: - Please analyze only requested layers/materials; if multiple inseparable layers please homogenize and treat as single layer analysis
- please retain samples for follow up PCB analysis

Method of Delivery:

Relinquished By (Sign): <i>[Signature]</i>	Received By (Driver/Depot): <i>[Signature]</i>	Received at Lab: <i>Sneeppom Rohmai</i>	Verified By: <i>[Signature]</i>
Relinquished By (Print): G. Katsuno	Date/Time: Feb 22/21 15:57	Date/Time: Feb 23, 2021 12:00	Date/Time: Feb 23/21
Date/Time: Feb 22, 2021 / 15:50	Temperature: _____ °C	Temperature: _____ °C	pH Verified [] By: N/A

Sample ID	Sample Description / Location	Date Sampled
L-001	Glossy white paint / Interior walls and beams (1001 and throughout)	Feb9-2021 ✓
L-002	Matte white paint / Interior walls (1030)	Feb9-2021 ✓
L-003	Orange-red paint / Fire Safety highlights (1030)	Feb9-2021 ✓
L-004	Yellow trim ceramic tile glazing / Int. side of perimeter hanger cinderblock walls	Feb10-2021 ✓
L-005	Blue-grey textured ceramic tile glazing / Washroom floor (1123)	Feb10-2021 ✓
L-006	Red ceramic tile glazing / Flooring (1137, 1138, 1139)	Feb10-2021 ✓
L-007	Red ceramic tile glazing / Baseboard trim (1137, 1138, 1139)	Feb10-2021 ✓
L-008	Grey-beige paint / 2F office walls (2087)	Feb12-2021 ✓
L-009	Mustard yellow paint / 2F office walls (2075)	Feb12-2021 ✓



Parcel ID: 2109191

Aly
 Feb 22/21
 1557

Certificate of Analysis

Golder Associates Ltd. (Ottawa)

1931 Robertson Rd
Ottawa, ON K2H 5B7
Attn: Gregory Katsuno

Client PO:
Project: 20442331
Custody:

Report Date: 1-Apr-2021
Order Date: 26-Mar-2021

Order #: 2113589

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2113589-01	L-010
2113589-02	L-011

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 01-Apr-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 26-Mar-2021

Client PO:

Project Description: 20442331

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Mercury by CVAA	EPA 7471B - CVAA, digestion	31-Mar-21	31-Mar-21
Metals, ICP-MS	EPA 6020 - Digestion - ICP-MS	31-Mar-21	31-Mar-21

Certificate of Analysis

Report Date: 01-Apr-2021

Client: **Golder Associates Ltd. (Ottawa)**

Order Date: 26-Mar-2021

Client PO:

Project Description: 20442331

Client ID:	L-010	L-011	-	-
Sample Date:	22-Mar-21 09:00	22-Mar-21 09:00	-	-
Sample ID:	2113589-01	2113589-02	-	-
MDL/Units	Paint	Paint	-	-

Metals

Arsenic	50 ug/g	<50	<50	-	-
Lead	5 ug/g	<5	<5	-	-
Mercury	2 ug/g	<2	<2	-	-

Certificate of Analysis

Report Date: 01-Apr-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 26-Mar-2021

Client PO:

Project Description: 20442331

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Arsenic	ND	50	ug/g						
Lead	ND	5	ug/g						
Mercury	ND	2	ug/g						

Certificate of Analysis

Report Date: 01-Apr-2021

Client: **Golder Associates Ltd. (Ottawa)**

Order Date: 26-Mar-2021

Client PO:

Project Description: 20442331

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Arsenic	ND	50	ug/g	ND			NC	50	
Lead	ND	5	ug/g	ND			NC	50	
Mercury	ND	2	ug/g	ND			NC	30	

Certificate of Analysis

Report Date: 01-Apr-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 26-Mar-2021

Client PO:

Project Description: 20442331

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Arsenic	50.5	50	ug/g	ND	101	70-130			
Lead	45.7	5	ug/g	ND	91.3	70-130			
Mercury	16	2	ug/g	ND	106	70-130			

Certificate of Analysis

Client: Golder Associates Ltd. (Ottawa)

Client PO:

Report Date: 01-Apr-2021

Order Date: 26-Mar-2021

Project Description: 20442331

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated



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Parcel ID: 2113589



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p: 1-800-749-1947
e: paracel@paracellabs.com

Chain of Custody
(Lab Use Only)

Page 1 of 2

Client Name: Golder Associates Ltd.	Project Reference: 20442331	Turnaround Time: ☐ 1 Day ☐ 3 Day ☐ 2 Day ☒ Regular Date Required: _____
Contact Name: Gregory Katsuno / Patrick Moullos / Tim Seabert	Quote #	
Address: 1931 Robertson Road, Ottawa, ON, K2H 5B7	PO #	
Telephone: (613) 592-9600	Email Address: GKatsuno@golder.com / Tim.Seabert@golder.com PMoullos@golder.com	

Criteria: ☐ O. Reg. 153/04 (As Amended) Table ☐ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: _____ ☐ Other: _____Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) ☒ Paint A (Air) O (Other)

Required Analyses

Parcel Order Number:

2113589 - Bulk

2113591 - TCLP

Sample ID/Location Name		Matrix	Air Volume	# of Containers	Sample Taken		PHCs FI-F4+BTEX	VOCs	PAHs	Metals by ICP		Hg	Cu/Vi	B (HWS)	Lead	Arsenic	Lead TCLP				
					Date	Time															
1	please see attached	P	N/A	1			☐	☐	☐	☐	☒	☐	☐	☐	☒	☒	☐	☐	☐	☐	☐
2	sample inventory						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	L-003 is to be analyzed						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐
4	for TCLP (lead only)						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
10							☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Comments: Please analyze requested paint only; if multiple inseparable paint layers please homogenize and treat as single paint layer

-Please retain sample material for follow up TCLP analysis as needed

Method of Delivery:

Drop Box

Relinquished By (Sign):	Received by Driver/Depot:	Received at:	Verified By:
Relinquished By (Print): Gregory Katsuno	Date/Time: Mar 26 12:11 PM	Date/Time: 3-26-21 16:00	Date/Time: March 26, 2021 17:00
Date/Time: Mar 26, 2021	Temperature: _____ °C	Temperature: _____ °C	pH Verified [] By: _____

2113589 - R01K
2113591 - TCLP

Sample ID	Sample Description / Location	Date Sampled
L-010	Pale beige paint / drywall office walls and wood trim (2050E)	Mar22-2021
L-011	Off-white paint / wood finishes in storage room (2033)	Mar22-2021
L-003	Orange-red paint / Fire Safety highlights (1030) → lead TCLP	Mar24-2021

Parcel ID: 2113589



gfr

Drop Box

Aly
Mar 26/21 1604

Certificate of Analysis

Golder Associates Ltd. (Ottawa)

1931 Robertson Rd
Ottawa, ON K2H 5B7
Attn: Gregory Katsuno

Client PO:
Project: 20442331
Custody:

Report Date: 1-Apr-2021
Order Date: 26-Mar-2021

Order #: 2113591

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2113591-01	L-003

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 01-Apr-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 26-Mar-2021

Client PO:

Project Description: 20442331

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Metals, ICP-MS	TCLP EPA 6020 - Digestion - ICP-MS	1-Apr-21	1-Apr-21
Solids, %	Gravimetric, calculation	29-Mar-21	29-Mar-21

Certificate of Analysis

Report Date: 01-Apr-2021

Client: **Golder Associates Ltd. (Ottawa)**

Order Date: 26-Mar-2021

Client PO:

Project Description: 20442331

Client ID:	L-003	-	-	-
Sample Date:	24-Mar-21 09:00	-	-	-
Sample ID:	2113591-01	-	-	-
MDL/Units	Paint	-	-	-

Physical Characteristics

% Solids	0.1 % by Wt.	100	-	-	-
----------	--------------	-----	---	---	---

EPA 1311 - TCLP Leachate Metals

Lead	0.05 mg/L	<0.05	-	-	-
------	-----------	-------	---	---	---

Certificate of Analysis

Report Date: 01-Apr-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 26-Mar-2021

Client PO:

Project Description: 20442331

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
EPA 1311 - TCLP Leachate Metals									
Lead	ND	0.05	mg/L						

Certificate of Analysis

Report Date: 01-Apr-2021

Client: **Golder Associates Ltd. (Ottawa)**

Order Date: 26-Mar-2021

Client PO:

Project Description: 20442331

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
EPA 1311 - TCLP Leachate Metals									
Lead	ND	0.05	mg/L	ND			NC	32	
Physical Characteristics									
% Solids	50.6	0.1	% by Wt.	55.1			8.6	25	

Certificate of Analysis

Report Date: 01-Apr-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 26-Mar-2021

Client PO:

Project Description: 20442331

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
EPA 1311 - TCLP Leachate Metals									
Lead	49.0	0.05	mg/L	3.68	90.6	77-126			

Certificate of Analysis

Report Date: 01-Apr-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 26-Mar-2021

Client PO:

Project Description: 20442331

Qualifier Notes:***Sample Qualifiers :***

- 1 : TCLP/mSPLP extraction method deviated as 100g sample solids was not available for leaching. A lower mass was used, but the 20:1 liquid to solid ratio was maintained for the extraction.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.



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p: 1-800-749-1947
e: paracel@paracelabs.com

Chain of Custody
(Lab Use Only)

Page 1 of 2

Client Name: Golder Associates Ltd.
Contact Name: Gregory Katsuno / Patrick Moulles / Tim Seabert
Address: 1931 Robertson Road, Ottawa, ON, K2H 5B7
Telephone: (613) 592-9600
Project Reference: 20442331
Quote #
PO #
Email Address: GKatsuno@golder.com / Tim.Seabert@golder.com
PMoulles@golder.com

Turnaround Time:

☐ 1 Day ☐ 3 Day
☐ 2 Day ☒ Regular

Date Required:

Criteria: ☐ O. Reg. 153/04 (As Amended) Table ☐ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: ☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) ☒ (Paint) A (Air) O (Other)

Required Analyses

Parcel Order Number:

2113589 - Bulk

2113591 - TCLP

Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken		PHCs FI-F4+BTX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	Lead	Arsenic	Lead TCLP				
				Date	Time														
1																			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Comments: Please analyze requested paint only; if multiple inseparable paint layers please homogenize and treat as single paint layer

Method of Delivery:

Drop Box

Relinquished By (Sign): [Signature]
Received by Driver/Depot: [Signature]
Relinquished By (Print): Gregory Katsuno
Date/Time: Mar 26, 2021
Temperature: 11°C
Received at Lab: [Signature]
Date/Time: Mar 26, 2021 16:00
Temperature: 17°C

Verified By: [Signature]
Date/Time: March 26, 2021 17:00
pH Verified [] By:

214704 - Bulk
2113591 - TCLP

Sample ID	Sample Description / Location	Date Sampled
L-010	Pale beige paint / drywall office walls and wood trim (2050E)	Mar22-2021
L-011	Off-white paint / wood finishes in storage room (2033)	Mar22-2021
L-003	Orange-red paint / Fire Safety highlights (1030) → lead TCLP	Mar24-2021

Parcel ID: 2113591



972

Drop Box

Aly
Mar 26 12:16 PM

Certificate of Analysis

Golder Associates Ltd. (Ottawa)

1931 Robertson Rd.
Ottawa, ON K2H 5B7
Attn: Tim Seabert

Client PO:
Project: 20442331
Custody:

Report Date: 6-Apr-2021
Order Date: 1-Apr-2021

Order #: 2114515

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2114515-01	L-004
2114515-02	L-005
2114515-03	L-001
2114515-04	L-002
2114515-05	L-003
2114515-06	L-006

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 06-Apr-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 1-Apr-2021

Client PO:

Project Description: 20442331

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Metals, ICP-MS	TCLP EPA 6020 - Digestion - ICP-MS	6-Apr-21	6-Apr-21
Solids, %	Gravimetric, calculation	6-Apr-21	6-Apr-21

Certificate of Analysis

Report Date: 06-Apr-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 1-Apr-2021

Client PO:

Project Description: 20442331

	Client ID:	L-004	L-005	L-001	L-002
	Sample Date:	10-Feb-21 09:00	10-Feb-21 09:00	11-Feb-21 09:00	11-Feb-21 09:00
	Sample ID:	2114515-01	2114515-02	2114515-03	2114515-04
	MDL/Units	Other	Other	Other	Other

Physical Characteristics

% Solids	0.1 % by Wt.	100	100	100	100
----------	--------------	-----	-----	-----	-----

EPA 1311 - TCLP Leachate Metals

Lead	0.05 mg/L	0.16	<0.05	<0.05	<0.05
------	-----------	------	-------	-------	-------

	Client ID:	L-003	L-006	-	-
	Sample Date:	11-Feb-21 09:00	11-Feb-21 09:00	-	-
	Sample ID:	2114515-05	2114515-06	-	-
	MDL/Units	Other	Other	-	-

Physical Characteristics

% Solids	0.1 % by Wt.	100	100	-	-
----------	--------------	-----	-----	---	---

EPA 1311 - TCLP Leachate Metals

Lead	0.05 mg/L	0.31	0.34	-	-
------	-----------	------	------	---	---

Certificate of Analysis

Report Date: 06-Apr-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 1-Apr-2021

Client PO:

Project Description: 20442331

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
EPA 1311 - TCLP Leachate Metals									
Lead	ND	0.05	mg/L						

Certificate of Analysis

Report Date: 06-Apr-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 1-Apr-2021

Client PO:

Project Description: 20442331

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
EPA 1311 - TCLP Leachate Metals									
Lead	ND	0.05	mg/L	ND			NC	32	
Physical Characteristics									
% Solids	89.2	0.1	% by Wt.	92.8			4.0	25	

Certificate of Analysis

Report Date: 06-Apr-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 1-Apr-2021

Client PO:

Project Description: 20442331

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
EPA 1311 - TCLP Leachate Metals									
Lead	39.8	0.05	mg/L	0.639	78.3	77-126			

Certificate of Analysis

Report Date: 06-Apr-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 1-Apr-2021

Client PO:

Project Description: 20442331

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.



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ec: paracelsusparacellabs.com

Page 1 of 2

Client Name: Golder Associates Ltd.	Project Reference: 20442331	Turnaround Time:	
Contact Name: Gregory Katsuno / Tim Seibert / Patrick Moullos	Quote #	☐ 1 Day	☐ 3 Day
Address: 1931 Robertson Road, Ottawa, ON, K2H 5B7	PO #		
	Email Address: GKatsuno@golder.com / Tim.Seibert@golder.com	☐ 2 Day	☒ Regular
Telephone: (613) 592-9600	PMoullos@golder.com	Date Required: _____	

Criteria: ☐ O. Reg. 153/04 (As Amended) Table ☐ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: _____ ☐ Other: _____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Required Analyses

[illegible]

Comments: - Please analyze only requested layers/materials; if multiple inseparable layers please homogenize and treat as single layer
- please retain samples for follow up GC/MS analysis

Method of Delivery:

Relinquished By (Sign): <i>[Signature]</i>	Received by Driver/Depot: <i>[Signature]</i>	Received at Lab: <i>Sneepporn Nohmai</i>	Verified By: <i>[Signature]</i>
Relinquished By (Print): <i>G. Katsuno</i>	Date/Time: <i>Feb 22/21 15:50</i>	Date/Time: <i>Feb 23, 2021 12:00</i>	Date/Time: <i>Feb 23/21</i>
Date/Time: <i>Feb 22, 2021 / 15:50</i>	Temperature: <i>_____</i> °C	Temperature: <i>_____</i> °C	pH Verified ☒ By: <i>N/A</i>

4-1-21 16:38



B65

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300-2319 St. Laurent Blvd.
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e: paracel@paracellabs.com

Chain of Custody

(Lab Use Only)

Page 1 of 2

Client Name: Goldier Associates Ltd.	Project Reference: 20442331	Turnaround Time: ☐ 1 Day ☐ 3 Day ☐ 2 Day ☒ Regular
Contact Name: Gregory Katsuno / Tim Seabert / Patrick Moulles	Quote #	
Address: 1931 Robertson Road, Ottawa, ON, K2H 5B7	PO #	Date Required: _____
Telephone: (613) 592-9600	Email Address: GKatsuno@golder.com / Tim.Seabert@golder.com / P.Moulles@golder.com	

Criteria: ☐ O. Reg. 153/04 (As Amended) Table ☐ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: _____ ☐ Other: _____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Required Analyses

[illegible]

10	Comments: - Please analyze only requested layers/materials; if multiple inseparable layers please homogenize and treat as single layer - please retain samples for follow up TCLP analysis	Method of Delivery: Drop Box
----	--	------------------------------

Relinquished By (Sign): 	Received by Driver/Depot: 	Received at Lab:  	Verified by: 
Relinquished By (Print): G. Katsuno	Date/Time: Feb 22/21 15:57	Date/Time: Feb 23, 2021 6:12:00	Date/Time: Feb 23/21
Date/Time: Feb 22/21 15:57	Temperature: _____ °C	Temperature: _____ °C	pH Verified () By: N/A

4-1-2 1638

Sample ID	Sample Description / Location	Date Sampled
L-001	Glossy white paint / Interior walls and beams (1001 and throughout)	Feb9-2021 ✓
L-002	Matte white paint / Interior walls (1030)	Feb9-2021 ✓
L-003	Orange-red paint / Fire Safety highlights (1030)	Feb9-2021 ✓
L-004	Yellow trim ceramic tile glazing / Int. side of perimeter hanger cinderblock walls	Feb10-2021 ✓
L-005	Blue-grey textured ceramic tile glazing / Washroom floor (1123)	Feb10-2021 ✓
L-006	Red ceramic tile glazing / Flooring (1137, 1138, 1139)	Feb10-2021 ✓
L-007	Red ceramic tile glazing / Baseboard trim (1137, 1138, 1139)	Feb10-2021 ✓
L-008	Grey-beige paint / 2F office walls (2087)	Feb12-2021 ✓
L-009	Mustard yellow paint / 2F office walls (2075)	Feb12-2021 ✓



Parcel ID: 2114515

Sample ID	Sample Description / Location	Date Sampled
L-001	6" x 6" white ceramic tile glazing / washroom W Hanger	Feb11-2020 ✓
L-002	6" x 2" white trim ceramic tile glazing / washroom W Hanger	Feb11-2020 ✓
L-003	6" x 1" white accent ceramic tile glazing / washroom W Hanger	Feb11-2020 ✓
L-004	Red paint / Fire safety highlights W Hanger	Feb11-2020 ✓
L-005	Pale blue paint / Office walls E Hanger	Feb11-2020 ✓
L-006	Teal paint / Office walls E Hanger	Feb11-2020 ✓



Parcel ID: 2114515

Certificate of Analysis

Golder Associates Ltd. (Ottawa)

1931 Robertson Rd
Ottawa, ON K2H 5B7
Attn: Gregory Katsuno

Client PO:
Project: 20442331
Custody:

Report Date: 12-Apr-2021
Order Date: 6-Apr-2021

Order #: 2115213

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2115213-01	L-008

Approved By:



Dale Robertson, BSc
Laboratory Director

Certificate of Analysis

Report Date: 12-Apr-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 6-Apr-2021

Client PO:

Project Description: 20442331

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Metals, ICP-MS	TCLP EPA 6020 - Digestion - ICP-MS	8-Apr-21	8-Apr-21
Solids, %	Gravimetric, calculation	12-Apr-21	12-Apr-21

Certificate of Analysis

Report Date: 12-Apr-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 6-Apr-2021

Client PO:

Project Description: 20442331

Client ID:	L-008	-	-	-
Sample Date:	12-Feb-21 09:00	-	-	-
Sample ID:	2115213-01	-	-	-
MDL/Units	Paint	-	-	-

Physical Characteristics

% Solids	0.1 % by Wt.	100	-	-	-
----------	--------------	-----	---	---	---

EPA 1311 - TCLP Leachate Metals

Lead	0.05 mg/L	<0.20 [1]	-	-	-
------	-----------	-----------	---	---	---

Certificate of Analysis

Report Date: 12-Apr-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 6-Apr-2021

Client PO:

Project Description: 20442331

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
EPA 1311 - TCLP Leachate Metals									
Lead	ND	0.05	mg/L						

Certificate of Analysis

Report Date: 12-Apr-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 6-Apr-2021

Client PO:

Project Description: 20442331

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
EPA 1311 - TCLP Leachate Metals									
Lead	0.082	0.05	mg/L	0.086			3.9	32	
Physical Characteristics									
% Solids	100	0.1	% by Wt.	100			0.0	25	

Certificate of Analysis

Report Date: 12-Apr-2021

Client: Golder Associates Ltd. (Ottawa)

Order Date: 6-Apr-2021

Client PO:

Project Description: 20442331

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
EPA 1311 - TCLP Leachate Metals									
Lead	54.1	0.05	mg/L	8.56	91.1	77-126			

Certificate of Analysis

Client: Golder Associates Ltd. (Ottawa)

Client PO:

Report Date: 12-Apr-2021

Order Date: 6-Apr-2021

Project Description: 20442331

Qualifier Notes:

Sample Qualifiers :

1 : Elevated Reporting Limits due to limited sample volume.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

Paracel ID: 2115213



RELIABLE.

B52

Head Office
300-2319 St. Laurent Blvd.
Ottawa, Ontario K1G 4J8
1-800-749-1947
paracel@paracellabs.com

Chain of Custody
(Lab Use Only)

Page 1 of 2

Turnaround Time:

☐ 1 Day ☐ 3 Day
☐ 2 Day ☒ Regular

Date Required:

Client Name: Golder Associates Ltd.

Project Reference: 20442331

Contact Name: Gregory Katsuno / Tim Seibert / Patrick Moullos

Quote #

Address: 1931 Robertson Road, Ottawa, ON, K2H 5B7

PO #

Telephone: (613) 592-9600

Email Address: GKatsuno@golder.com / Tim.Seibert@golder.com
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Criteria: ☐ O. Reg. 153/04 (As Amended) Table ☐ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: ☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Required Analyses

Paracel Order Number:

Sample ID/Location Name

Matrix

Air Volume

of Containers

Sample Taken

Date

Time

PHCs FI-F4+BTX

VOC's

PAHs

Metals by ICP

Hg

Cr VI

B (HWS)

Lead

Arsenic

1

P

N/A

1

2

Please see

3

attached sample

4

Inventory

5

6

7

8

9

10

Comments: - Please analyze only requested layers/materials; if multiple inseparable layers please
- please homogenize and treat as single layer
- please retain samples for follow up re-analysis

Method of Delivery:

Relinquished By (Sign):

Received by Depot:

Received at Lab:

Verified By:

Relinquished By (Print):

Date/Time:

Date/Time:

Date/Time:

Date/Time:

Temperature:

Temperature:

pH Verified () By:

Sample ID	Sample Description / Location	Date Sampled
L-001	Glossy white paint / Interior walls and beams (1001 and throughout)	Feb9-2021
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L-007	Red ceramic tile glazing / Baseboard trim (1137, 1138, 1139)	Feb10-2021
L-008	Grey-beige paint / 2F office walls (2087)	Feb12-2021
L-009	Mustard yellow paint / 2F office walls (2075)	Feb12-2021

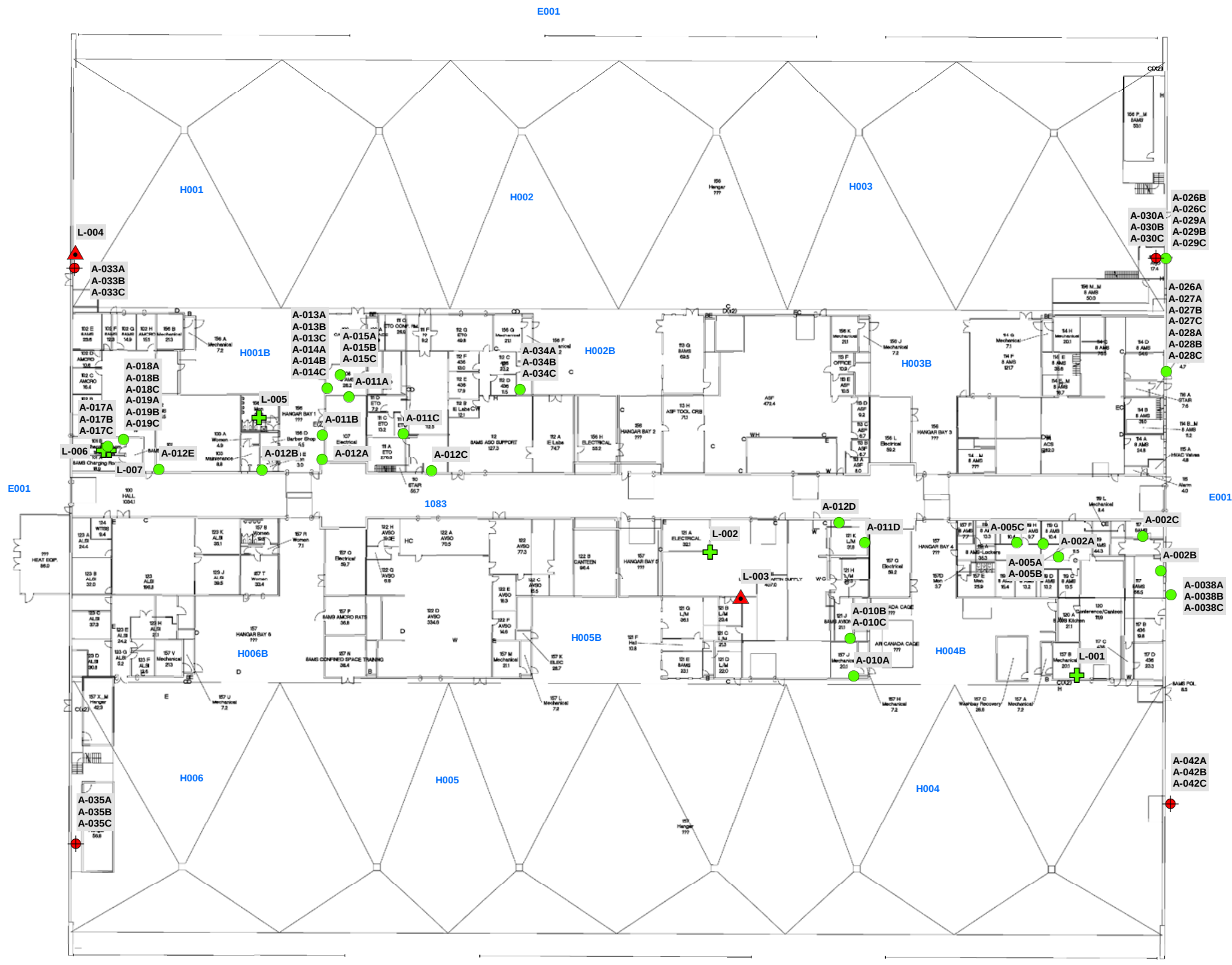


Parcel ID: 2115213

2/11
Feb 08/21
1557

APPENDIX E

Figures



KEY MAP



SCALE 1:25,000

LEGEND

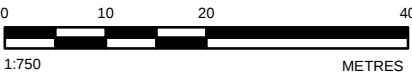
- APPROXIMATE NON-ASBESTOS-CONTAINING MATERIAL SAMPLE LOCATION
- APPROXIMATE ASBESTOS-CONTAINING MATERIAL SAMPLE LOCATION
- APPROXIMATE NON-LEAD/MERCURY/ARSENIC-CONTAINING PAINT SAMPLE LOCATION
- APPROXIMATE LEAD-CONTAINING PAINT SAMPLE LOCATION

NOTE(S)

1. ALL SAMPLE LOCATIONS ARE APPROXIMATE

REFERENCE(S)

- FLOOR PLANS PROVIDED BY DEFENCE CONSTRUCTION CANADA.
- PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: UTM ZONE 18



CLIENT

DEFENCE CONSTRUCTION CANADA

PROJECT

DESIGNATED SUBSTANCES AND HAZARDOUS MATERIALS ASSESSMENT - BUILDINGS 52 AND 65, 8 WING, CANADIAN FORCES BASE TRENTON, ONTARIO

TITLE

SAMPLE LOCATION PLAN - HANGAR 10, BUILDING 52, MAIN FLOOR

CONSULTANT



YYYY-MM-DD	2021-04-12
DESIGNED	AB
PREPARED	JEM
REVIEWED	PM
APPROVED	TAS

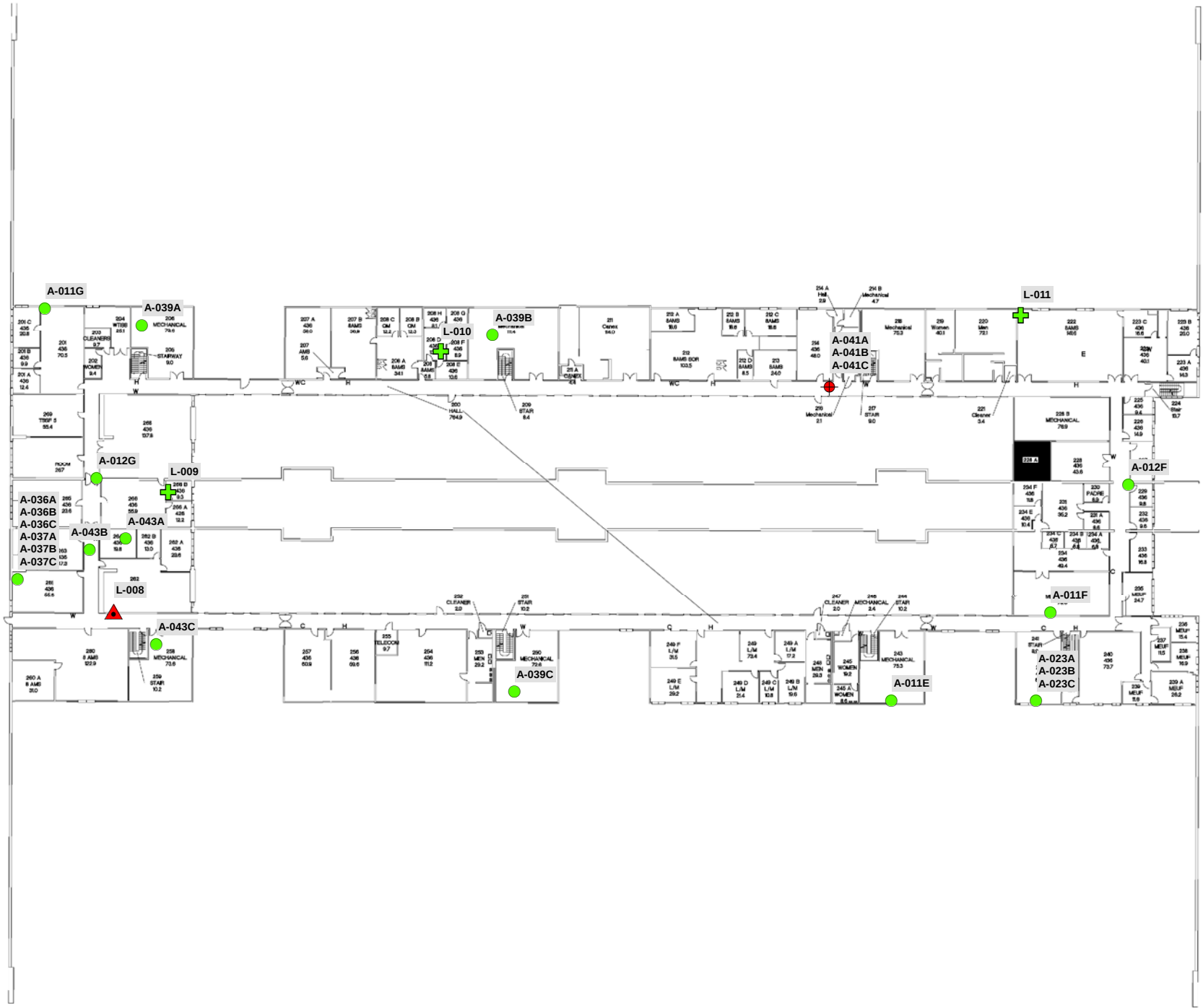
PROJECT NO.
20442331

CONTROL
0001

REV.
0

FIGURE

1

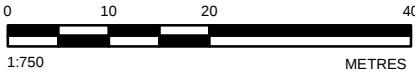


SCALE 1:25,000

- LEGEND**
- APPROXIMATE NON-ASBESTOS-CONTAINING MATERIAL SAMPLE LOCATION
 - APPROXIMATE ASBESTOS-CONTAINING MATERIAL SAMPLE LOCATION
 - ✚ APPROXIMATE NON-LEAD/MERCURY/ARSENIC-CONTAINING PAINT SAMPLE LOCATION
 - ▲ APPROXIMATE LEAD-CONTAINING PAINT SAMPLE LOCATION

NOTE(S)
1. ALL SAMPLE LOCATIONS ARE APPROXIMATE

REFERENCE(S)
1. FLOOR PLANS PROVIDED BY DEFENCE CONSTRUCTION CANADA.
2. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83,
COORDINATE SYSTEM: UTM ZONE 18



CLIENT DEFENCE CONSTRUCTION CANADA		
PROJECT DESIGNATED SUBSTANCES AND HAZARDOUS MATERIALS ASSESSMENT - BUILDINGS 52 AND 65, 8 WING, CANADIAN FORCES BASE TRENTON, ONTARIO		
TITLE SAMPLE LOCATION PLAN - HANGAR 10, BUILDING 52, SECOND FLOOR		
CONSULTANT	YYYY-MM-DD	2021-04-12
DESIGNED	AB	
PREPARED	JEM	
REVIEWED	PM	
APPROVED	TAS	
PROJECT NO. 20442331	CONTROL 0001	REV. 0
FIGURE 2		



APPENDIX F

Historical Report

126 Lake Street

St. Catharines, ON

L2R 5Y1

Designated Substances and Hazardous Materials Survey

within the

***Building 52 - 52 North Star Drive
Hanger 10
CFB 8 Wing Trenton***



Provided to:

***CFB Wing Trenton
CE Contracts
P.O. Box 1000 Stn Forces
Astra, ON K0K 3W0***

Dated: January 14, 2009

Project #: 1310-2836-OOHM-19



Toll: 1-888-271-2111
Bus: (905) 988-1554
Fax: (905) 988-1910

**DESIGNATED SUBSTANCES AND HAZARDOUS
MATERIALS SURVEY**

8-WING CFB TRENTON

**BUILDING 52
HANGER 10
52 NORTH STAR DRIVE
TRENTON, ONTARIO**

Prepared for:

**CE CONTRACTS
8-WING CFB TRENTON**

P.O. Box 1000 Stn Forces
Building 155
ASTRA, ON
K0K 3W0

Prepared By:

Ontario Environmental & Safety Network Ltd.
126 Lake Street
St. Catharines, Ontario
L2R 5Y1

January 14, 2009

Project Number: 1310-2836-OOHM-19



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- A1: Bulk Material Sample Results-Asbestos
- A2: Bulk Material Sample Results-Paint

Appendix B: Photographs

Appendix C: Individual Functional Space Forms

EXECUTIVE SUMMARY

Ontario Environmental & Safety Network Ltd. completed a designated substances survey and hazardous materials inventory from December 8, 2008 to January 14, 2009 at Building 52 located at 52 North Star Drive, for CE Contracts. The purpose of the survey was to identify Designated Substances (as per Ontario OH&S Act) and other potentially hazardous materials within the building and to subsequently provide recommendations on disposal practices and safety precautions to be followed during future maintenance, renovation, or demolition activities. Main findings of the survey are summarized as follows:

ASBESTOS

During the assessment, a total of three-hundred and forty-eight (348) building materials were sampled to be analyzed for asbestos. As per Reg. 278/05, the laboratory split these materials where multiple layers were observed. These samples were divided into one hundred and thirteen (113) homogeneous material groups. Forty (41) of the homogeneous material groups were identified to contain asbestos. Detailed results of bulk material asbestos testing and identification locations can be found in Section 6.2.

PAINT

A total of sixty-six (66) paint samples were collected from floor, walls, ceilings and other surfaces within Building 52. The submitted samples were analyzed for lead, mercury and arsenic. Detailed results of paint sample testing can be found in Section 6.3.

Lead

Eleven (11) of the sixty-six (66) paint coatings were analytically identified to contain greater than 5000 µg/g.

Mercury

The paint samples submitted for laboratory analysis indicated that three (3) of the sixty-six (66) paint coatings contained mercury levels that exceeds 10 µg/g.

Arsenic

Sixty-six (66) paint samples were tested for arsenic content. Pigments provide the colour and covering power in paint; some highly coloured pigments may contain arsenic. There is no guideline for arsenic in paint coatings. One (1) of the samples indicated arsenic levels above the analytical method detection limit.

TCLP

No paint samples collected from the building were submitted for toxic characteristics leachate procedure (TCLP) as per O. Reg. 347 amended by O. Reg. 395/07.

It is advised that during any renovation or demolition process that a representative material of the bulk debris be sent to an accredited laboratory for TCLP analysis for waste stream identification validation.

Not all paint coatings were tested so as to maintain the cosmetic integrity of the painted surfaces.

MERCURY-THERMOSTATS AND FLUORESCENT LIGHT TUBES

Thermostats and fluorescent light tubes generally contain small quantities of mercury. There were twenty-five (25) confirmed mercury-containing thermostats observed at time of inspection. There are several gauges and equipment within mechanical rooms and fan rooms that could potentially contain mercury, which were not visible to OESN technicians at the time of inspection. There are approximately four thousand nine hundred and ninety-one (4991) fluorescent tubes, one hundred and seventy-three (173) mercury vapour bulbs, and eleven (11) compact fluorescent bulbs which are known to contain mercury vapour. Storage of fluorescent tubes and mercury vapour bulbs was also observed at several locations. These items should be handled with care, and if removed, they should not be disposed of in a landfill site, but should be recycled by a material-recycling specialist.

PCB'S-FLUIDS

Numerous brands of fluorescent light ballasts are found within the 52 North Star Drive facility. Ballast codes General Electric 16A240, Gold Label 17A240T and GE 0605 16A125 are confirmed to contain PCB. Ballast codes Intersafe SP232120, Thomas BR-240-120-LP, Solar

Select 570-30SX, and CGE Gold Label 1782-40-EW are suspected to contain PCB. Ballast codes Advance REL 2P32-RH-TP, Advance R-2S-40-I-TP, Advance REL-2P32-SC, Philips R-2C-34-TPC, Philips RQM-2S40-TPC, R-2S40-I-TP, Ultra Save ST-232-120, Gold Label 1029-2STD, Advance RELB-2S40-SC, Gold Label 10292STD-BESC (New Electronic), Standard 10168STD, Valmiser 17A1024E, GE Gold Label 17A240E, Solo Saver 570-322, RQM-2S40-TPC, Howard Industries F2/327S-120, Robertson R120-P, and Magnetek 446-LR-TC-P are labelled as non-PCB containing ballasts. Due to the fixture being energized and height restrictions, verification of the date stamps and ballast codes could not be confirmed at all locations. Non-PCB ballasts are clearly marked on the label, and if not so marked, the ballast should be considered to be PCB containing. Once removed from service, all ballasts should be examined to determine PCB content and disposed of as per regulatory requirements.

MOULD

No bulk mould samples were collected from building materials as part of this study. A visual inspection of the facility did reveal potential mould growth and/or water damage/staining within multiple locations. The visual inspection revealed water damage on the ceiling tiles within the multiple office spaces, as indicated within Appendix C. During renovation, should any mould-contaminated materials, which were concealed during this site-inspection, become visible, appropriate personal protective equipment should be worn while working inside the building. Remediation should be conducted using protocols consistent with Canadian Construction Associations document entitled “Mould Guidelines for the Canadian Construction Industry”.

SILICA

Bulk samples of concrete and block were not collected. It should be assumed that original concrete within Building 52 contains silica.

HALOCARBONS

The most common building materials that contain halocarbons are air conditioning systems and fire extinguishing systems. Sixteen (16) window air conditioning units were visible to the technicians during the inspection. Twenty (20) refrigerators and four (4) water coolers were observed to have the potential to contain halocarbons.

1.0 INTRODUCTION

CE Contracts commissioned Ontario Environmental & Safety Network Ltd. to conduct a designated substance and hazardous materials inventory study of the building materials within a Building 52, located at 52 North Star Drive. The locations of the hazardous materials within Building 52 are shown in Figures 1-18.

2.0 OBJECTIVES

- Conduct a Designated Substances Survey of the building as per the requirements of Section 30 of the Ontario Occupational Health and Safety Act.
- Identify any other potentially hazardous materials that may be present in the building in addition to the “designated substances”, such as mould, PCB’s and halocarbons.
- Provide information regarding appropriate health and safety precautions and waste disposal practices to be followed during any renovation work.

3.0 SCOPE OF WORK

Our scope of work involved the following:

- Collect representative samples of building materials that potentially contain designated substances or other potentially hazardous substances from interior and exterior areas of the facility. The sampling work was not intrusive in that walls, ceilings and roofing were not cut in order to examine conditions of building materials.
- Analyze representative samples of building construction material for asbestos, lead, arsenic, PCB and mercury content.
- Inspect fluorescent light fixture ballasts with respect to the potential presence of PCBs.
- Identify the potential presence of halocarbons.
- Prepare a report documenting the inspection methodology and presenting the observations and results of the inspection and analytical work. The report also includes recommended abatement methods for any designated substances and hazardous materials present.

4.0 REGULATORY FRAMEWORK

This investigation provides CE Contracts with an assessment that identifies and locates building construction materials containing hazardous components within Building 52 located at 52 North Star Drive, 8-WING CFB Trenton, ON as of January 14, 2009. The roles, duties and responsibilities outlined in the Ontario Occupational Health and Safety Act (OHSA) provided the basis and the legal framework for the investigation and the report evaluation.

The OHSA defines the duties of employers and others to protect workers from health and safety hazards on the job. In undertaking a renovation project, several duties within Section 25 of the Act apply. These duties include:

- Taking all reasonable precautions to protect the health and safety of workers [clause 25 (2) (h)].
- Providing information, instruction and supervision to protect worker health and safety [clause (2) (a)].
- Acquainting a worker or a person in authority over a worker with any hazard in the work handling and storage, use, disposal and transport of any article, device, equipment or a biological, chemical or physical agent [clause 25 (2)(d)].

In addition, Section 30 of the OHSA deals with the presence of designated substances on construction projects. “Designated substances”¹ are known toxic materials that present serious risks of illness. Examples of designated substances in construction include asbestos, lead, silica and mercury. Under Section 30, the owner of a project is required to determine whether any designated substances are present at the project site, and if so, are required to provide a list of all designated substances to contractors bidding the project. [clause 30 (1)]. Subcontractors are to be informed as well [clause 30 (4)].

¹ For the purposes of this report, “designated substances” is replaced with the term “hazardous materials”.

If an owner or contractor fails to comply with Section 30, they will be liable for any loss or damages that result from discovery of a designated substance [clause 30 (5) (6)].

The following materials are designated under Section 30:

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

Given the non-industrial setting, isocyanates, coke oven emissions, acrylonitrile, ethylene oxide and vinyl chloride would not have an impact or presence within the facility. Based on the age of the building and its previous occupied use, Asbestos, Lead, Silica, Benzene, Arsenic and Mercury were all considered.

In conjunction with the general provisions and duties of employers and others outlined in the Act, the *Regulation for Construction Projects O.Reg. 213/91 as amended to O.Reg. 628/05* applies to this project.

Hazardous materials are not mentioned specifically but there are sections in the Regulation that apply to project scenarios where there is potential for worker exposure to hazardous materials.

- A competent person shall perform tests and observations necessary for the detection of hazardous conditions on a project [Section 14 (5)].
- If the dissemination of dust is a hazard to a worker, the dust shall be adequately controlled or each worker who may be exposed to the hazard shall be provided with adequate personal protective equipment [Section 59].

Further to *O.Reg. 213/91 (as amended to O. Reg. 628/05)* there are several Designated Substance Regulations (DSR's) that apply to the projected work at the subject site. These DSR's include:

- Regulation respecting Control of Exposure to Biological or Chemical Agents, Ontario Regulation 833/90 as amended by Ontario Regulation 248/08.
- Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations - Ontario Regulation 278/05
- Regulation respecting Lead – made under the Occupational Health and Safety Act Ontario Regulation 843/90 as amended by 109/04.
- Regulation Respecting Silica – made under the Occupational Health and Safety Act, Ontario Regulation 845/90 as amended by 155/08.
- Regulation Respecting Arsenic – made under the Occupational Health and Safety Act, Ontario Regulation 836 as amended by 102/04.
- Regulation Respecting Asbestos – made under the Occupational Health and Safety Act, Ontario Regulation 837 as amended by 279/05.
- Regulation Respecting Mercury – made under the Occupational Health and Safety Act, Ontario Regulation 844 as amended by 110/04.
- Regulation Respecting Benzene – made under the Occupational Health and Safety Act, Ontario Regulation 839 as amended by 105/04.

4.1 ASBESTOS

Asbestos materials were regulated in the asbestos manufacturing and processing industries during the 1970's, but the prevalence of health risks to building occupants where asbestos materials were applied was not investigated in Canada until 1984 by the Royal Commission on Matters of Health and Safety. The findings on the data from this report are in accordance with the Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations. Asbestos fibre exposure is considered a health concern when high concentrations of fibres are inhaled over a long period of time, and may cause serious illness or death. Asbestos containing material (ACM) is defined in Ontario to be any material containing greater than 0.5% asbestos by dry weight.²

According to Ontario Regulation 278/05, once an inspection of a building reveals that it contains friable asbestos containing materials, the owner/property manager, must prepare and maintain on the premises a record of the location of any friable materials. All ACM shall be re-evaluated at reasonable intervals because it can deteriorate over time, and work practices by staff can often disturb the applied ACM. Both aspects can lead to the release of airborne asbestos fibres, which pose a potential risk to workers, and occupants.

This regulation outlines the control of asbestos materials during alteration, repairs, demolition and maintenance activities.

² Ministry of Labour. (June 2005). *Ontario Regulation 278/05, Occupational Health and Safety Act*, Ottawa: Queens Press.

4.2 BIOLOGICAL CONTAMINATION

There are currently no provincial public health regulations, quantitative standards, guidelines or uniform recommendations for responding to mould indoors. Bioaerosols are difficult to monitor, which makes the establishment of guidelines and standards a challenge. It remains unclear if there is a quantity of indoor mould that is acceptable with respect to health.³ Despite this, several publications and guidelines exist on mould identification and remediation inside occupied buildings. Health Canada states that the presence of visible mould growth indoors requires investigation and remedial action regardless of determining the airborne spore load (1995). The following publications provide information on health effects from fungi exposure, mould investigation techniques, remediation steps, as well as additional information, and are frequently used in industry as a tool for mitigating water damage and mould problems:

- Health Canada (1995) *“Fungal Contamination in Public Buildings: A Guide to Recognition and Management”*.
- Canadian Construction Association (2004). *“Mould Guidelines for the Canadian Construction Industry”*.
- United States Environmental Protection Agency (2001). *“Mold Remediation in Schools and Commercial Buildings”*.
- City of New York (1995). *“Guidelines on Assessment and Remediation of Fungi in Indoor Environments”*.

Fungi are a group of eukaryotic unicellular or multicellular organisms which include mushrooms, mildews, moulds and yeasts. Micro-organisms (fungi and bacteria) are ubiquitous in nature and are found in all outdoor and indoor air in varying concentrations and types. Microbial contaminants are often deposited in a building or ventilation system and may or may not reflect the presence of a local microbial amplifier (source). Issues for occupant health and comfort usually occur when sustained growth of microbial contamination occurs. The presence of water is usually the limiting factor.

³ Redd SC. (2002). *State of the Science of Molds and Human Health*. Centers for Disease Control and Prevention (CDC).

Moulds thrive in moist and damp conditions and commonly grow in shower stalls, refrigerator drip trays, house plants, air conditioning systems, humidifiers, garbage cans, upholstered furniture and inside mattresses. Due to condensation or moisture problems, unventilated attics and basements are the most likely spots within a building to find mould growth. Cellulose substrates are also favourable for mould growth i.e. paper, cardboard, ceiling tiles and wood (EPA 2003; NIAID 1998; American Academy of Pediatrics 1998). Surfaces that have been soiled or have susceptible materials on them (such as paint or paper) do not need to be as damp for mould development (Kuhn and Ghannoum 2003).

Moulds reproduce by making spores. These contaminants usually cannot be seen by the naked eye and are continually airborne floating throughout indoor and outdoor air. The fungi that grow on building materials within a residence come from the soil outside. Spores may enter building through open windows or doors, ventilation systems or may already be present indoors. If spores land on a damp surface that is conducive to growth, they may begin growing, spreading and releasing large numbers of spores into the air. In the process, they start to digest and eat away at the material they are growing on, affecting the look, smell and possibly the structural integrity of the building (EPA 2001; U.S. Department of Labour 2003; CMHC 2004).

4.3 LEAD PAINT

The regulation covering the designated substance of lead is referenced through Ontario by means of Ontario Regulation 843/90 as amended by 109/04. This regulation pertains to the control and exposure of lead in the industrial setting. As of the writing of this report the regulation of lead in the construction setting has not yet been implemented. However, requirements to provide personal protective equipment, engineering controls and waste disposal should be met. Further, airborne dust levels should be controlled to insure the safety of the environment and employees or contractors.

Regulation 109/04 formerly 843/90 applies to all employers and workers at a workplace where lead is present, produced, processed, used, handled or stored and at which the worker is likely to inhale, ingest or absorb lead. The employer is required to take all necessary measures and procedures by means of engineering controls, work practices and hygiene practices and facilities to ensure that the time weighted average exposure of the worker to airborne lead does not exceed 0.05 mg/m^3 .

The US Department of Housing and Urban Development (HUD) has set a level of 5000 ppm as the lower limit defining lead based paint.⁴

4.4 MERCURY

Health Canada currently has a proposed limit of 10 ppm for mercury in paint/coatings on children's toys; however regulated limits do not currently exist for these compounds as components of building materials.⁵ The regulation covering mercury as a designated substance is Ontario Regulation 844 as amended by 110/04. This regulation pertains to the control and exposure of mercury in the industrial setting. Requirements to provide personal protective equipment, engineering controls and waste disposal should be met during a construction project, despite the absence of regulated limits for mercury-containing building materials.

4.5 ARSENIC

The regulation covering arsenic as a designated substance is referenced through Ontario Regulation 836/90 as amended by 102/04. This regulation pertains to the control and exposure of arsenic in the industrial setting and requires the employer to take all necessary measures and procedures by means of engineering controls, work practices and hygiene practices to ensure that worker exposure is reduced to levels lower than the regulated limit. There is currently no regulation pertaining to arsenic in the construction setting; however requirements to provide personal protective equipment, engineering controls and waste disposal should be met. Further, airborne dust levels should be controlled as to ensure the safety of employees. There are no regulated limits for arsenic as a component of building materials.

4.6 POLY CHLORINATED BIPHENYLS (FLUID)

PCBs can be found in electrical equipment (e.g. transformers and capacitors in fluorescent lamp ballasts) that were manufactured prior to approximately 1978. Ontario manages PCBs using regulations under the *Environmental Protection Act* and is the only province with a regulation

⁴ Jacobs DE et. al. (1997). *The prevalence of Lead-based Paint Hazards in US Housing*. Chapters 7 & 15 – Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing. Washington: USHUD.

⁵ Health Canada (1993). *Hazardous Products (Liquid Coating Materials) Regulations*. C.R.C., c928. Ottawa: Queens Press.

specific to the management of PCB wastes. The limit defining PCB containing material in Ontario has been set at 50 parts per million (ppm).⁶ The regulation defines what is classified as PCB waste, defines that PCB is a designated waste, and the rules concerning the storage and disposal of the waste. Registration of this waste must be performed with the Ministry of the Environment prior to the transportation and disposal of materials containing PCB's.

4.7 SILICA

The regulation respecting Silica, Regulation 845 (as amended by 155/08) applies to every employer and worker at a workplace where silica is present, produced, processed, used, handled or stored and at which the worker is likely to inhale silica. This regulation states that every employer shall take all necessary measures and procedures by means of engineering controls, and work / hygiene practices to ensure that the time-weighted average exposure of a worker to silica is reduced to the lowest practical level.⁷

4.8 HALOCARBONS

The Federal Halocarbon Regulations under Part IV of the Canadian Environmental Protection Act (CEPA) apply to halocarbon refrigeration, air conditioning, fire extinguishing and solvent cleaning systems that are either owned by the Government of Canada or owned by Federal Works and Undertakings. Companies and personnel servicing these systems are also subject to the requirements of the regulations, where applicable. The main components of the Regulations that potentially impact upon building renovation/demolition work relate to halocarbon release prohibition and halocarbon recovery requirements. Before dismantling, disposing of, or decommissioning a refrigeration, air conditioning or fire extinguishing system, the halocarbons must be recovered into an appropriate container. Recovery of a halocarbon from a refrigeration system must be performed by a certified person in accordance with the Refrigerant Code of Practice. Before disposing of a refrigeration or fire extinguishing system containing a halocarbon, the owner must ensure that the halocarbons have been recovered from the system and a notice is placed on it containing the information prescribed in Schedule III of the Regulations.

⁶ Ministry of the Environment (1990). *Ontario Regulation 362 Waste Management – PCB's*. Ottawa: Queens Press.

⁷ Ministry of Labour (1990). *Ontario Regulation 845, as amended by 111/04, Occupational Health and Safety Act, Designated Substance Silica*. Ottawa: Queens Press.

4.9 BENZENE

Benzene may be present in various paints, coatings and adhesives within the building as well as the diesel fuel. It is however unlikely that benzene concentrations in air from renovation projects will exceed the regulated time-weighted average exposure value (TWAEV) for worker exposure of 0.5 parts benzene per million (ppm).

5.0 METHODOLOGY

Non-invasive bulk sampling of building materials was completed on January 14, 2009. The following sections outline the sampling methodology used by OESN Ltd. throughout Building 52, 52 North Star Drive. All samples were shipped to accredited laboratories using Chain of Custody control.

5.1 INSPECTION

Site plan drawings were provided by the client representative. Each area or room was assigned a four to five (4-5) alphanumeric functional space identification number to simplify reporting. A thorough room-by-room inspection for all accessible areas was conducted.

5.2 ASBESTOS

Unless they are labelled, it is impossible to tell whether building products contain asbestos. Asbestos fibres can be identified only with a specially equipped microscope. The bulk samples were collected according to the procedures outlined below and sent to an accredited laboratory for polarized light microscopy (PLM) analysis. If previous reporting information was made available then the results were used as required.

A visual inspection of each individual functional space focuses the observations and testing for all accessible suspected asbestos-containing material for sampling. Investigation is based on a non-invasive strategy, however invasive testing is performed where applicable in order to submit a bulk sample for a suspected asbestos-containing material for sampling.

5.2.1 BULK SAMPLE COLLECTION PROCEDURES FOR ASBESTOS

1. Respiratory protection was worn when sampling ACM material.
2. A representative (5-10 grams) sample was taken from within the suspect material by penetrating the entire depth of the material (since it may have been applied in more than one layer or covered with paint or other protective coating).
3. Table 1: Bulk Material Samples, located in O.Reg 278/05 was followed for taking bulk samples. The table is reproduced as follows:

Item	Type of material	Size of area of homogeneous material	Minimum number of bulk material samples to be collected
1.	Surfacing material, including without limitation material that is applied to surfaces by spraying, by towelling or otherwise, such as acoustical plaster on ceilings and fireproofing materials on structural members	Less than 90 square meters	3
		90 or more square meters, but less than 450 square meters	5
		450 or more square meters	7
2.	Thermal insulation, except as described in item 3	any size	3
3.	Thermal insulation patch	Less than 2 linear meters or 0.5 square meters	1
4.	Other material	Any size	3

4. Mechanical insulation was sampled on systems and tanks within the work zone. Unless visually identified as fibreglass, the straight runs and elbows (including fittings) were sampled. The following items were considered (where visually present) during this survey:
 - thermal system insulation (TSI), including pipe insulation, tank insulation, cement fittings and cement parging.
 - surfacing materials (fireproofing)
 - wall materials, including drywall and plaster
 - floor materials, including vinyl floor tile, linoleum and ceramic tile mortar bed/grout

5. The material was sprayed with a light mist of water to prevent fibre release during sampling. The material was not disturbed any more than necessary. The cut area was covered with duct tape to seal it, where applicable.
6. If pieces of material broke off during sampling, the contaminated area was cleaned up by wet-cleaning.

5.2.2 EVALUATION OF ASBESTOS FOR RESPONSE AND CONTROL: WEIGHTED HAZARD CONTROL SYSTEM

The Weighted Hazard Control System (WHCS) is a rating system that was developed to rate the condition of the asbestos containing materials for ongoing maintenance within the operation of the facility. All asbestos containing materials in the building were assessed using the WHCS criteria, based on damage, location, accessibility and any other factor which may influence the integrity of the material.

5.2.2.1 WEIGHTED HAZARD CONTROL SYSTEM (WHCS)

The Weighted Hazard Control System (WHCS) has been developed to provide a standard method for quantifying the current state of existing asbestos containing materials. The WHCS is designed to rate the potential for the release of asbestos fibres from Asbestos Containing Material (**ACM**) into the air near the personnel who may work in the vicinity and be in casual contact with the ACM under their normal work activities. The WHCS is used to indicate if asbestos control measures are needed to manage the ACM and to prioritize the hazard potential for exposure. During the on site assessment, a WHCS Functional Space Identification Form is used to record building materials and quantities for each room or area.

The WHCS is defined by the following parameters:

1. Asbestos indicator
2. Type of Material
3. Condition
4. Accessibility
5. Frequency of Access
6. Airborne Fibre Migration Potential
7. Fibre Generating Mechanism

Each of these parameters is defined in the paragraphs below.

1. Asbestos Indicator

The asbestos identification criteria separate the materials surveyed into two categories:

- a. Non- asbestos containing materials (based on PLM analytical method detection limits).
- b. Asbestos containing materials.

Non-asbestos materials do not receive a WHCS numerical evaluation.

2. Type of Material

This section of the functional space form is completed after sample analysis and/or visual identification is performed. Within this application, the appropriate WHCS rating for the type of asbestos material is listed. The range of WHCS factors is from 0 (Transite Panel, non-friable floor tiles) etc. to 12 (caposite pipe insulation, crocidolite or sprayed amosite). The measurement rates materials that are generally non –friable (low rating) to extremely friable materials (high ratings).

3. Condition of Material

The WHCS sets out four conditions for asbestos containing materials: terrible, bad, moderate and excellent (original condition). The range of rating is from 0 (excellent) to 20 (terrible). The criteria for evaluation of condition are described below:

Excellent: Material that is in original condition, showing no signs of damage or deterioration.

- WHCS rating will be 0 – 5.

Moderate: Material that shows no signs of damage or deterioration:

- Piping or thermal insulation that is well jacketed with no exposed asbestos ends or seams.
- May have elbows that are thinly jacketed but in good shape.
- Sprayed fireproofing or sprayed thermal insulation that has no areas of damage or delamination.
- Non-friable materials showing minor damage and no signs of deterioration. (i.e. cracked floor tiles or transite panel board)
- The WHCS rating will be 5 - 9.

Bad: Material that has large areas moderately damaged or disturbed such as:

- Piping or building thermal insulation that has areas of jacketing either damaged or missing resulting in exposed asbestos.
- Sprayed fireproofing or sprayed thermal insulation that has minor areas damaged and/or falling away from the base deck material
- Severely damaged, ACM where loose debris is present and the binder has disintegrated. At this point any contact will cause the material to become friable and crack or split.
- The WHCS rating will be 10 - 15.

Terrible: Material that has large areas severely damaged or disturbed such as:

- Piping or thermal insulation that has large areas of jacketing either severely damaged or missing.
- Sprayed fireproofing or sprayed thermal insulation that has large areas damaged and/or falling away from the base decking material.
- Pipe insulation is exposed and significant areas have been dislodged.
- Damage cannot be easily repaired or encapsulated.
- Debris is present on horizontal surfaces, or on the floor.
- The WHCS rating will be 16 - 20.

4. Accessibility of Material

Once the condition of the ACM is rated, the accessibility, frequency and the potential for fibre generating mechanisms are rated. This rating is based on frequency of work activities and accessibility of ACM present. This will identify the areas for the worst potential fibre release. The WHCS rating and accessibility criteria are listed below. Accessibility is intended to indicate the potential for individuals to be in contact with Asbestos Containing Material.

Accessibility Criteria	
Accessibility	Rating
Unavoidable Physical Contact	8
Avoidable Arms Length	4
Need Ladder or Above Ceiling Panels	2
Need Scaffold or greater than 20 feet	0

5. Frequency of Access

The frequency of access is determined by the site inspector. It is intended to indicate how often personnel are likely to be in potential contact with the ACM. These criteria are listed below.

Frequency of Access	
Routine Example	WHCS Factor 8 ACM piping in a regularly traveled corridor. Spray insulation on walls in rooms where there is daily occupancy. Elbows in a room on the heating/water system.
Periodic Example	WHCS Factor 4 Insulation on mechanical equipment within a room not regularly occupied but accessed for regular maintenance and inspections.
Infrequent Example	WHCS Factor 2 Areas of the building not regularly accessed such as certain vaults, mezzanines or storage rooms.
Rarely Example	WHCS Factor 0 Areas of the building rarely accessed such as a vacant storage room or crawlspace.

6. Airborne Fibre Migration

Airborne Fibre Migration is a measure of how readily asbestos fibres can become airborne and dispersed. The range of WHCS factors are from zero (0) where unlimited dilution would occur, such as an outside or exterior area. A four (4) would indicate a confined space such as inside a crawlspace or vault, where no dilution of airborne fibres would occur.

7. Fibre Generating Mechanisms Factor

Fibre Generating Mechanisms involve any form of action that could cause deterioration of the asbestos containing material resulting in the release of asbestos fibres. Typical fibre generating mechanisms may include water damage, grinding, vibration, foot traffic, physical arm movement, air movement etc. The range of weighted WHCS factors is from 0 (no mechanisms) to 4 (several).

5.2.2.2 WEIGHTED HAZARD CONTROL SYSTEM (WHCS): RATING TOTAL

Once bulk sample results are supplied and the percentage and type of asbestos are determined, the individual ratings are added together to form a WHCS rating total. The WHCS ratings total is used to establish what response measures and control plans are required. For example, a WHCS rating producing a total of >30 requires prompt asbestos control action. A note for minor damage or encapsulation may be suggested even if the material is not >30. The intent of the WHCS rating total is to produce an algorithmic scale aimed at standardizing reporting. This assists in reducing the potential for inspector bias.

5.2.2.3 WHCS FUNCTIONAL SPACE IDENTIFICATION FORMS: OTHER FEATURES

The Weighted Hazard Control System (WHCS) functional space form is completed for each area of the building. Possible ACM are addressed on the left column area of the form, which allows the suspect ACM to be described by structural/mechanical system (i.e. floor, wall, ceiling, piping, structural, ducting, mechanical, and other) and described further by the component of the system (i.e. steam supply, and return or condensate). It should be understood that if a certain system was not listed in an area then the system was not present in the area, or the system could not be determined.

It must be noted that during the investigation, the WHCS Forms are used to collect as much data as required for each item inspected. The sections discussed above are completed during the investigation, with the appropriate rating determined by the inspector. The following describes additional features used on the WHCS Functional Space Forms.

A. Location/Comments

This section of the form is used by the inspector to note specific areas where damage was found or to note any comments, which would help clarify the detail of the ACM inspected.

B. General Notes

This section of the form makes evaluative notes aimed at identifying immediate respiratory concerns.

C. Response Measure Actions

This section of the form evaluates what control measures are required to effectively handle the rated material. The response measures take into consideration the visual observation of the material and the overall WHCS Hazard rating total. The response measures are categorized as follows.

Hazard Rating Response Measure Control System		
Removal	For significantly damaged materials or materials which are located in close proximity of high public activity areas. Require immediate control and repair is not an option	<u>RESPONSE RATING #1</u>
Encapsulation	For damaged materials that do not have a high activity accessibility level, or have a low potential for significant damage yet present a fair threat to disturbance.	<u>RESPONSE RATING #2</u>
Enclosure	For materials that have low exposure levels and is in undamaged condition, or has minor repairable damage factors. This involves hoarding an area or jacketing a pipe insulation material.	<u>RESPONSE RATING #3</u>
Repair	For minor damage on materials with low or occasional exposure levels. Repair may include minor removal, minor encapsulation of damaged edges.	<u>RESPONSE RATING #4</u>
Operations & Maintenance (O & M)	These materials are typically in good condition, do not pose a threat unless renovated, sanded, cut, abraded, drilled, or otherwise disturbed so as to alter the structural integrity of the material.	<u>RESPONSE RATING #5</u>

Hazard assessment of asbestos containing materials must be a continuous process due to changes in the building environment. A competent person should be assigned the duty of inspecting and recording changes in the functional spaces that contain asbestos containing materials. Personnel should be informed of asbestos containing materials and their locations. In the event of an emergency that causes any friable asbestos containing material to become damaged, immediate action to remedy the problem should be taken.

Note: In the event that any information has been withheld or is not known by the client, Ontario Environmental & Safety Network Ltd. reserves the right to modify any assessment in regards to the material at the time of inspection.

The WHCS is not intended to be used by those who remove asbestos containing materials. The appropriate asbestos containing control procedures should be reassessed prior to any potential of disturbance of asbestos materials, regardless of any WHCS score previously assigned to the material. If the suspect asbestos containing material is to be disturbed, requirements for control are required.

Weighted Hazard Control System (WHCS) functional space forms for each area of the building were prepared during the inspection and are provided within this report in Appendix C.

5.3 BIOLOGICAL CONTAMINANTS

The most important element of an evaluation of biological contaminants (i.e. mould and/ or bird droppings) is a thorough visual inspection of the project areas. There were no areas identified as containing mould growth, but moisture damage was observed at two locations within Building 52. There were no areas identified as containing bird droppings. Conditions can change post inspections.

5.4 LEAD

Lead can be found in painted and varnished surfaces, including windows and window sills, doors and door frames, stairs, railings and banisters. Bulk samples were taken according to the following sampling methodology and sent to an accredited laboratory for the analysis of lead.

5.4.1 Bulk Sample Collection Procedures for Lead Paint

1. An area where paint is peeling was chosen. If there was no peeling then a baseboard, wall or window sill was selected to lift bulk paint samples.
2. A sheet of paper was placed where it would catch the sample. A sharp tool was used to scrape away approximately 50 milligrams (mg) of paint. The sampler ensured scraping through all layers, since the paint containing lead is often found on a bottom layer.

Sampling technique concentrated on obtaining the base layer of paint.

3. The paper was creased to form a spout and the paint scrapings poured into a small plastic Ziploc bag. The bag was sealed tightly. A separate bag was labelled and used for each sample.

5.5 MERCURY

Regulated amounts of metals are found on all types of painted surfaces, but higher levels of mercury-containing paints may have been used on exterior painted wood, metal and concrete, and interior window frames and doors. A selection of bulk samples taken for lead paint analysis was also analyzed for mercury content.

Fluorescent light tubes and some thermostats contain small amounts of mercury and were visually observed and documented.

5.6 PCBs

Lamp ballast capacitors are among some of the products that may contain PCBs. Identification of PCB containing lamp ballasts should be assessed using Environment Canada's 1991 publication entitled "*Identification of Lamp Ballasts Containing PCBs*".

5.7 SILICA

Crystalline silica is in most of the rocks found in the earth's crust and in gravels, sands and soils. Demolition and replacement of the concrete floor & mortar material in the clay brick would be necessary for obtaining samples for analysis, thus it was determined that testing for the analysis of silica may be unnecessary. Bulk samples were not collected. It should be assumed that original concrete and concrete block are silica containing.

5.8 HALOCARBONS

Visual investigation of building components was performed to identify if materials contained the presence of Halocarbons. The identification of air conditioning systems, refrigerators and fire extinguishers were the main target of inventory identification. Materials are listed and identified where evident.

5.9 LABORATORY TESTING

Asbestos Bulk Material Samples

Asbestos bulk samples were submitted to Carolina Environmental, Inc., Cary, North Carolina for analysis and were tested using Polarized Light Microscopy (PLM). The laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). The accredited test method is EPA/600/M4-82/020, and is equivalent to EPA/600/R-93/116 for the analysis of asbestos building materials.

Paint Bulk Material Samples

All paint samples were submitted to Paracel Laboratories Ltd. for analysis of lead, mercury and arsenic. Paracel Laboratories Ltd. is accredited by the Canadian Association for Environmental Analytical Laboratories (CAEAL). The following analytical protocols were used:

- Mercury – EPA 7471A-CVAA, digestion
- Lead - EPA method 6020 – digestion, ICP-MS
- Arsenic – EPA method 6020 – digestion, ICP-MS

6.0 OBSERVATIONS AND RESULTS

6.1 BUILDING LAYOUT

Building 52, also known as Hanger 10 located at 52 North Star Drive, is a two-storey facility consisting of main and second level offices, storage rooms, common areas, and aircraft work bays.

The layouts of existing conditions are shown on Figures 1-18.

6.2 POTENTIAL ASBESTOS CONTAINING MATERIALS

Materials that were suspected of being asbestos-containing were grouped homogeneously; that is, they were grouped as to similar composition (colour, texture), system and general appearance (age, type, etc.). Collected samples were organized by the mechanical or structural system (i.e. wall, floor, ceiling and thermal insulation).

One hundred and sixteen (116) homogeneous building material groups, a total of three hundred and forty-eight samples were collected for asbestos content analysis during the assessment. As per Reg. 278/05, the laboratory split these samples where multiple layers were observed. The sampling locations and analytical results of building materials sampled for asbestos are summarized in Table 6-1. The sampling locations are presented in selected photos in Appendix B. Laboratory analytical results are attached in Appendix A. The cloth wiring, some vibration gaskets and roofing materials were not sampled to maintain the integrity of the materials and due to live power restrictions. Further sampling to determine if asbestos is present within these materials is recommended prior to any alterations or demolition.

TABLE 6-1: RESULTS OF BULK MATERIAL ASBESTOS TESTING

HM No.	Drawing Location	Material(s)	ACM	Sample No.
FLOOR MATERIALS				
HF-01	1001	12" x 12" Blue Green with Fleck Floor Tile Mastic	Non Asbestos	2836-19-F01
	1001	12" x 12" Blue Green with Fleck Floor Tile Mastic	Non Asbestos	2836-19-F02
	1001	12" x 12" Blue Green with Fleck Floor Tile Mastic	Non Asbestos	2836-19-F03
HF-02	1001	12" x 12" Dark Grey Floor Tile Mastic	Non Asbestos	2836-19-F04
	1001	12" x 12" Dark Grey Floor Tile Mastic	Non Asbestos	2836-19-F05
	1001	12" x 12" Dark Grey Floor Tile Mastic	Non Asbestos	2836-19-F06
HF-03	1002	12" x 12" Salmon with White Streak Floor Tile	2% Chrysotile	2836-19-F07
		Mastic	Non Asbestos	
	1002	12" x 12" Salmon with White Streak Floor Tile	Not Analyzed	2836-19-F08
		Mastic	Non Asbestos	
	1002	12" x 12" Salmon with White Streak Floor Tile	Not Analyzed	2836-19-F09
HF-04		Mastic	Non Asbestos	
	1006	12" x 12" White with Brown Streak Floor Tile	Non Asbestos	2836-19-F10
	1006	12" x 12" White with Brown Streak Floor Tile	Non Asbestos	2836-19-F11
		Mastic	Non Asbestos	2836-19-F12
	1006	12" x 12" White with Brown Streak Floor Tile	Non Asbestos	
		Mastic	Non Asbestos	
	1006	Black Mastic from Below Floor Tile	Non Asbestos	2836-19-F109
HF-05	1006	Black Mastic from Below Floor Tile	Non Asbestos	2836-19-F110
	1006	Black Mastic from Below Floor Tile	Non Asbestos	2836-19-F111
	1002	12" x 12" Salmon with Small White Streaks Black Mastic	Non Asbestos	2836-19-F13
	1002	12" x 12" Salmon with Small White Streaks	Non Asbestos	2836-19-F14
	1002	12" x 12" Salmon with Small White Streaks Black Mastic	Non Asbestos	2836-19-F15
	1002	Black Mastic	Non Asbestos	2836-19-F112
HF-06	1002	Black Mastic	Non Asbestos	2836-19-F113
	1015	12" x 12" Brick Red with White Streak Floor Tile	Non Asbestos	2836-19-F16
		Mastic	Non Asbestos	
	1015	12" x 12" Brick Red with White Streak Floor Tile	Non Asbestos	2836-19-F17
		Mastic	Non Asbestos	
HF-06	1015	12" x 12" Brick Red with White Streak Floor Tile	Non Asbestos	2836-19-F18
		Mastic	Non Asbestos	

HM No.	Drawing Location	Material(s)	ACM	Sample No.
HF-07	1010	12" x 12" Beige Floor Tile Mastic	Non Asbestos Non Asbestos	2836-19-F19
	1010	12" x 12" Beige Floor Tile Mastic	Non Asbestos Non Asbestos	2836-19-F20
	1010	12" x 12" Beige Floor Tile Mastic	Non Asbestos Non Asbestos	2836-19-F21
HF-08	1012	12" x 12" Beige with Medium Beige Fleck Floor Tile Mastic	Non Asbestos	2836-19-F22
	1012	12" x 12" Beige with Medium Beige Fleck Floor Tile Mastic	Non Asbestos Non Asbestos	2836-19-F23
	1012	12" x 12" Beige with Medium Beige Fleck Floor Tile Mastic	Non Asbestos Non Asbestos	2836-19-F24
HF-09	1014	12" x 12" Blue with White Fleck Floor Tile Mastic	Non Asbestos Non Asbestos	2836-19-F25
	1014	12" x 12" Blue with White Fleck Floor Tile Mastic	Non Asbestos Non Asbestos	2836-19-F26
	1014	12" x 12" Blue with White Fleck Floor Tile Mastic	Non Asbestos Non Asbestos	2836-19-F27
HF-10	1028	12" x 12" Medium Grey with Grey & White Fleck Floor Tile Mastic	Non Asbestos	2836-19-F28
	1028	12" x 12" Medium Grey with Grey & White Fleck Floor Tile Mastic	Non Asbestos Non Asbestos	2836-19-F29
	1028	12" x 12" Medium Grey with Grey & White Fleck Floor Tile Mastic	Non Asbestos Non Asbestos	2836-19-F30
HF-11	1032	12" x 12" White with Light Blue Fleck Floor Tile Mastic	Non Asbestos	2836-19-F31
	1032	12" x 12" White with Light Blue Fleck Floor Tile Mastic	Non Asbestos	2836-19-F32
	1032	12" x 12" White with Light Blue Fleck Floor Tile Mastic	Non Asbestos	2836-19-F33
HF-12	1035	9" x 9" Green with White Streak Floor Tile Mastic	2% Chrysotile Non Asbestos	2836-19-F34
	1035	9" x 9" Green with White Streak Floor Tile Mastic	Not Analyzed Non Asbestos	2836-19-F35
	1035	9" x 9" Green with White Streak Floor Tile Mastic	Not Analyzed Non Asbestos	2836-19-F36
HF-13	1035	9" x 9" Grey Floor Tile Mastic	2% Chrysotile Non Asbestos	2836-19-F37
	1035	9" x 9" Grey Floor Tile Mastic	Not Analyzed Non Asbestos	2836-19-F38
	1035	9" x 9" Grey Floor Tile Mastic	Not Analyzed Non Asbestos	2836-19-F39

HM No.	Drawing Location	Material(s)	ACM	Sample No.
HF-14	1033	12" x 12" White with Black Speckled Floor Tile	Non Asbestos	2836-19-F40
	1033	Mastic	Non Asbestos	2836-19-F41
		12" x 12" White with Black Speckled Floor Tile	Non Asbestos	
	1033	Mastic	2% Chrysotile	2836-19-F42
		12" x 12" White with Black Speckled Floor Tile	Non Asbestos	
HF-15	1069	12" x 12" Solid Grey Floor Tile	Non Asbestos	2836-19-F43
	1069	Mastic	2% Chrysotile	2836-19-F44
		12" x 12" Solid Grey Floor Tile	Non Asbestos	
	1069	Mastic	Not Analyzed	2836-19-F45
		12" x 12" Solid Grey Floor Tile	Non Asbestos	
HF-16	1074	12" x 12" Emerald Green with Fleck Floor Tile	Non Asbestos	2836-19-F46
	1074	Mastic	Non Asbestos	2836-19-F47
		Levelling Compound	Non Asbestos	
	1074	Plaster	Non Asbestos	2836-19-F48
		12" x 12" Emerald Green with Fleck Floor Tile	Non Asbestos	
HF-17	1074	12" x 12" Royal Blue Fleck Floor Tile	Non Asbestos	2836-19-F49
	1074	Mastic	Non Asbestos	2836-19-F50
		12" x 12" Royal Blue Fleck Floor Tile	Non Asbestos	
	1074	Mastic	Non Asbestos	2836-19-F51
		12" x 12" Royal Blue Fleck Floor Tile	Non Asbestos	
HF-18	1092	12" x 12" Off White with Brown Streak Floor Tile	Non Asbestos	2836-19-F52
	1092	Black Mastic	Non Asbestos	2836-19-F53
		12" x 12" Off White with Brown Streak Floor Tile	Non Asbestos	
	1092	Black Mastic	Non Asbestos	2836-19-F54
		12" x 12" Off White with Brown Streak Floor Tile	Non Asbestos	
HF-19	1099	12" x 12" Beige with Black Streak Floor Tile	Non Asbestos	2836-19-F55
	1099	Black Mastic	3% Chrysotile	2836-19-F56
		12" x 12" Beige with Black Streak Floor Tile	Non Asbestos	
	1099	Black Mastic	Not Analyzed	2836-19-F57
		12" x 12" Beige with Black Streak Floor Tile	Non Asbestos	
		Black Mastic	Not Analyzed	

HM No.	Drawing Location	Material(s)	ACM	Sample No.
HF-20	1104	12" x 12" Dark Blue with White Fleck Floor Tile	Non Asbestos	2836-19-F58
	1104	Black Mastic	Non Asbestos	2836-19-F59
		12" x 12" Dark Blue with White Fleck Floor Tile	Non Asbestos	
	1104	Black Mastic	Non Asbestos	2836-19-F60
HF-21	1105	12" x 12" Dark Blue with Blue Fleck Floor Tile	Non Asbestos	2836-19-F61
	1105	12" x 12" Dark Blue with Blue Fleck Floor Tile	Non Asbestos	2836-19-F62
	1105	12" x 12" Dark Blue with Blue Fleck Floor Tile	Non Asbestos	2836-19-F63
	1105	12" x 12" Dark Blue with Blue Fleck Floor Tile	Non Asbestos	2836-19-F63
HF-22	1097	9" x 9" White with Black Streak Floor Tile	5% Chrysotile	2836-19-F64
	1097	Black Mastic	5% Chrysotile	2836-19-F65
	1097	9" x 9" White with Black Streak Floor Tile	Not Analyzed	
	1097	Black Mastic	Not Analyzed	2836-19-F66
HF-23	1097	9" x 9" White with Black Streak Floor Tile	Not Analyzed	2836-19-F67
	1097	Black Mastic	Not Analyzed	
	1097	9" x 9" Olive Green with White Streak Floor Tile	3% Chrysotile	2836-19-F68
	1097	Black Mastic	5% Chrysotile	
HF-24	1118	12" x 12" Chocolate Brown with White Streak Floor Tile	Not Analyzed	2836-19-F69
	1118	Black Mastic	Not Analyzed	2836-19-F70
	1118	12" x 12" Chocolate Brown with White Streak Floor Tile	2 % Chrysotile	
	1118	Black Mastic	Non Asbestos	2836-19-F71
HF-25	1117	12" x 12" Beige with Brown and White Flecks Floor Tile	Not Analyzed	2836-19-F72
	1117	Black Mastic	Non Asbestos	
	1117	12" x 12" Beige with Brown and White Flecks Floor Tile	Not Analyzed	2836-19-F73
	1117	Black Mastic	Non Asbestos	
HF-26	1128	12" x 12" Beige with Brown and White Flecks Floor Tile	Not Analyzed	2836-19-F74
	1128	Black Mastic	Non Asbestos	
	1128	12" x 12" Beige with Brown and White Flecks Floor Tile	Not Analyzed	2836-19-F75
	1128	Black Mastic	Non Asbestos	
HF-27	1128	9" x 9" Off Beige with Light Streak Floor Tile	Non Asbestos	2836-19-F76
	1128	Black Mastic	< 1% Chrysotile	2836-19-F77
	1128	9" x 9" Off Beige with Light Streak Floor Tile	Non Asbestos	
	1128	Black Mastic	< 1% Chrysotile	2836-19-F78

HM No.	Drawing Location	Material(s)	ACM	Sample No.
		Tile Black Mastic	2% Chrysotile	
HF-27	1128	9" x 9" Dark Grey with Black and White Streaks Floor Tile Black Mastic	3% Chrysotile	2836-19-F79
	1128	9" x 9" Dark Grey with Black and White Streaks Floor Tile Black Mastic	2% Chrysotile Not Analyzed	2836-19-F80
	1128	9" x 9" Dark Grey with Black and White Streaks Floor Tile Black Mastic	Not Analyzed Not Analyzed	2836-19-F81
		Black Mastic	Not Analyzed	
HF-28	1061	12" x 12" White with Grey Fleck Floor Tile Black Mastic	Non Asbestos 2 % Chrysotile	2836-19-F82
	1061	12" x 12" White with Grey Fleck Floor Tile Black Mastic	Non Asbestos Not Analyzed	2836-19-F83
	1061	12" x 12" White with Grey Fleck Floor Tile Black Mastic	Non Asbestos Not Analyzed	2836-19-F84
HF-29	1046	12" x 12" Blue, Rose, Beige Army Pattern Floor Tile Black Mastic	Non Asbestos 3% Chrysotile	2836-19-F85
	1046	12" x 12" Blue, Rose, Beige Army Pattern Floor Tile Black Mastic	Non Asbestos Not Analyzed	2836-19-F86
	1046	12" x 12" Blue, Rose, Beige Army Pattern Floor Tile Black Mastic	Not Analyzed Non Asbestos	2836-19-F87
		Black Mastic	Not Analyzed	
HF-30	1042	12" x 12" Rose with White and Dark Rose Fleck Floor Tile	Non Asbestos	2836-19-F88
	1042	12" x 12" Rose with White and Dark Rose Fleck Floor Tile	Non Asbestos	2836-19-F89
	1042	12" x 12" Rose with White and Dark Rose Fleck Floor Tile	Non Asbestos	2836-19-F90
HF-31	1042	12" x 12" Beige Floor Tile under Rose Floor Tile Black Mastic	Non Asbestos Non Asbestos	2836-19-F91
	1042	12" x 12" Beige Floor Tile under Rose Floor Tile Black Mastic	Non Asbestos Non Asbestos	2836-19-F92
	1042	12" x 12" Beige Floor Tile under Rose Floor Tile Black Mastic	Non Asbestos Non Asbestos	2836-19-F93
		Black Mastic	Non Asbestos	
HF-32	1097	12" x 12" White with Bright Blue Fleck Floor Tile Black Mastic	Non Asbestos 2% Chrysotile	2836-19-F94
	1097	12" x 12" White with Bright Blue Fleck Floor Tile Black Mastic	Non Asbestos Not Analyzed	2836-19-F95
	1097	12" x 12" White with Bright Blue Fleck Floor Tile Black Mastic	Non Asbestos Not Analyzed	2836-19-F96
HF-33	1097	12" x 12" Rose with Brown Fleck Floor Tile Black Mastic	Non Asbestos 2% Chrysotile	2836-19-F97
	1097	12" x 12" Rose with Brown Fleck Floor Tile	Non Asbestos	2836-19-F98

HM No.	Drawing Location	Material(s)	ACM	Sample No.
	1097	Black Mastic 12" x 12" Rose with Brown Fleck Floor Tile Black Mastic	Not Analyzed Non Asbestos Not Analyzed	2836-19-F99
HF-34	2108C 2108C 2108C	Black Mastic Under Rubber Flooring Black Mastic Under Rubber Flooring Black Mastic Under Rubber Flooring	5% Chrysotile Not Analyzed Not Analyzed	2836-19-F100 2836-19-F101 2836-19-F102
HF-35	2109B 2109B 2109B	Navy Blue Rubber Flooring Grey Mastic Navy Blue Rubber Flooring Grey Mastic Navy Blue Rubber Flooring Grey Mastic	Non Asbestos Non Asbestos Non Asbestos Non Asbestos Non Asbestos Non Asbestos	2836-19-F103 2836-19-F104 2836-19-F105
HF-36	2016 2016 2016	Black/Yellow Mastic Black/Yellow Mastic Black/Yellow Mastic	5% Chrysotile Not Analyzed Not Analyzed	2836-19-F106 2836-19-F107 2836-19-F108
HF-37	2083 2083 2083	12" x 12" White with Blue & Grey Fleck Floor tile Black Mastic 12" x 12" White with Blue & Grey Fleck Floor tile Black Mastic 12" x 12" White with Blue & Grey Fleck Floor tile Black Mastic	Non Asbestos Non Asbestos Non Asbestos Non Asbestos Non Asbestos Non Asbestos	2836-19-F114 2836-19-F115 2836-19-F116
HF-38	2088 2088 2088	12" x 12" Mustard Yellow with White Streak Floor Tile Black Felt and Brown Mastic 12" x 12" Mustard Yellow with White Streak Floor Tile Black Felt and Brown Mastic 12" x 12" Mustard Yellow with White Streak Floor Tile Black Felt and Brown Mastic	2% Chrysotile Non Asbestos 2% Chrysotile Non Asbestos 2% Chrysotile Non Asbestos	2836-19-F117 2836-19-F118 2836-19-F119
HF-39	M003A M003A M003A	12" x 12" White with Black Speckled Floor Tile Yellow Mastic 12" x 12" White with Black Speckled Floor Tile Yellow Mastic 12" x 12" White with Black Speckled Floor Tile Yellow Mastic	Non Asbestos Non Asbestos Non Asbestos Non Asbestos Non Asbestos	2836-19-F120 2836-19-F121 2836-19-F122
HF-40	M003A M003A M003A	12" x 12" Black with White Speckled Floor Tile Yellow Mastic 12" x 12" Black with White Speckled Floor Tile Yellow Mastic 12" x 12" Black with White Speckled Floor Tile Yellow Mastic	Non Asbestos Non Asbestos Non Asbestos Non Asbestos Non Asbestos	2836-19-F123 2836-19-F124 2836-19-F125

HM No.	Drawing Location	Material(s)	ACM	Sample No.
HF-41	2059	12" x 12" Navy Blue with White Streak Floor Tile Black Mastic 2 nd Layer White Floor Tile 2 nd Layer Black Mastic	Non Asbestos Non Asbestos 5% Chrysotile 5% Chrysotile	2836-19-F126
	2059	12" x 12" Navy Blue with White Streak Floor Tile Black Mastic 2 nd Layer White Floor Tile 2 nd Layer Black Mastic	Non Asbestos Non Asbestos Not Analyzed Not Analyzed	2836-19-F127
	2059	12" x 12" Navy Blue with White Streak Floor Tile Black Mastic 2 nd Layer White Floor Tile 2 nd Layer Black Mastic	Non Asbestos Non Asbestos Not Analyzed Not Analyzed	2836-19-F128
	2059	12" x 12" Navy Blue with White Streak Floor Tile Black Mastic 2 nd Layer White Floor Tile 2 nd Layer Black Mastic	Non Asbestos Non Asbestos Not Analyzed Not Analyzed	2836-19-F129
HF-42	2102	Grey Epoxy Coating	Non Asbestos	2836-19-F129
	2102	Grey Epoxy Coating	Non Asbestos	2836-19-F130
	2102	Grey Epoxy Coating	Non Asbestos	2836-19-F131
WALL MATERIALS				
HW-01	1002	Drywall & Joint Compound	Non Asbestos	2836-19-W01
	1009	Drywall & Joint Compound	Non Asbestos	2836-19-W02
	1103	Drywall & Joint Compound	Non Asbestos	2836-19-W06
	M003C	Drywall & Joint Compound	Non Asbestos	2836-19-W19
	1029	Drywall & Joint Compound	Non Asbestos	2836-19-W20
	1061	Drywall & Joint Compound	Non Asbestos	2836-19-W21
	1087	Drywall & Joint Compound	Non Asbestos	2836-19-W22
HW-02	1098	12" x 12" Acoustical Tile with Brown Mastic	Non Asbestos	2836-19-W07
	1098	12" x 12" Acoustical Tile with Brown Mastic	Non Asbestos	2836-19-W08
	1098	12" x 12" Acoustical Tile with Brown Mastic	Non Asbestos	2836-19-W09
HW-03A	2006	Drywall & Joint Compound	2% Chrysotile	2836-19-W10
	2063A	Drywall & Joint Compound	2% Chrysotile	2836-19-W18
HW-03B	2060	Drywall & Joint Compound	Non Asbestos	2836-19-W15
	2041	Drywall & Joint Compound	Non Asbestos	2836-19-W16
	2101	Drywall & Joint Compound	Non Asbestos	2836-19-W17
	2036	Drywall & Joint Compound	Non Asbestos	2836-19-W23
	2047	Drywall & Joint Compound	Non Asbestos	2836-19-W24
HW-04	1088	Plaster Skim Coat Plaster Base Coat	Non Asbestos Non Asbestos	2836-19-W03
	1088	Plaster Skim Coat Plaster Base Coat	Non Asbestos Non Asbestos	2836-19-W04
	1088	Plaster Skim Coat Plaster Base Coat	Non Asbestos Non Asbestos	2836-19-W05
HW-05	1121	Texture Plaster Coat	4% Chrysotile	2836-19-W11
	1121	Texture Plaster Coat	Not Analyzed	2836-19-W12
	1121	Texture Plaster Coat	Not Analyzed	2836-19-W13
HW-06	R001	Transite Wall Panel	20% Chrysotile	2836-19-W14

HM No.	Drawing Location	Material(s)	ACM	Sample No.
CEILING MATERIALS				
HC-01	1002	2' x 4' Large Dot Strata Ceiling Tile	Non Asbestos	2836-19-C01
	1002	2' x 4' Large Dot Strata Ceiling Tile	Non Asbestos	2836-19-C02
	1002	2' x 4' Large Dot Strata Ceiling Tile	Non Asbestos	2836-19-C03
HC-02	1002	2' x 4' Small Dot Strata Ceiling Tile	Non Asbestos	2836-19-C04
	1002	2' x 4' Small Dot Strata Ceiling Tile	Non Asbestos	2836-19-C05
	1002	2' x 4' Small Dot Strata Ceiling Tile	Non Asbestos	2836-19-C06
HC-03	1004	2' x 4' Deep Strata Ceiling Tile	Non Asbestos	2836-19-C07
	1004	2' x 4' Deep Strata Ceiling Tile	Non Asbestos	2836-19-C08
	1004	2' x 4' Deep Strata Ceiling Tile	Non Asbestos	2836-19-C09
HC-04	1007	2' x 4' Wide Strata with Multi Dot Ceiling Tile	Non Asbestos	2836-19-C10
	1007	2' x 4' Wide Strata with Multi Dot Ceiling Tile	Non Asbestos	2836-19-C11
	1007	2' x 4' Wide Strata with Multi Dot Ceiling Tile	Non Asbestos	2836-19-C12
HC-05	1007	2' x 4' Mixed Strata Ceiling Tile	Non Asbestos	2836-19-C13
	1007	2' x 4' Mixed Strata Ceiling Tile	Non Asbestos	2836-19-C14
	1007	2' x 4' Mixed Strata Ceiling Tile	Non Asbestos	2836-19-C15
HC-06	1012	2' x 4' Horizontal Strata Ceiling Tile	Non Asbestos	2836-19-C16
	1012	2' x 4' Horizontal Strata Ceiling Tile	Non Asbestos	2836-19-C17
	1012	2' x 4' Horizontal Strata Ceiling Tile	Non Asbestos	2836-19-C18
HC-07	1014	2' x 4' Scattered Strata Ceiling Tile	Non Asbestos	2836-19-C19
	1014	2' x 4' Scattered Strata Ceiling Tile	Non Asbestos	2836-19-C20
	1014	2' x 4' Scattered Strata Ceiling Tile	Non Asbestos	2836-19-C21
HC-08	1010A	Drywall	Non Asbestos	2836-19-C22
	1010A	Drywall	Non Asbestos	2836-19-C23
	1010A	Drywall	Non Asbestos	2836-19-C24
HC-09	1028	2' x 4' Divot Ceiling Tile	Non Asbestos	2836-19-C25
	1028	2' x 4' Divot Ceiling Tile	Non Asbestos	2836-19-C26
	1028	2' x 4' Divot Ceiling Tile	Non Asbestos	2836-19-C27
HC-10	1035	2' x 4' Off White Deep Horizontal Strata Ceiling Tile	Non Asbestos	2836-19-C28
	1035	2' x 4' Off White Deep Horizontal Strata Ceiling Tile	Non Asbestos	2836-19-C29
	1035	2' x 4' Off White Deep Horizontal Strata Ceiling Tile	Non Asbestos	2836-19-C30
HC-11	1069	Acoustical Ceiling Tile	Non Asbestos	2836-19-C31
	1069	Acoustical Ceiling Tile	Non Asbestos	2836-19-C32
	1069	Acoustical Ceiling Tile	Non Asbestos	2836-19-C33
HC-12	1089	2' x 4' Dot Ceiling Tile	Non Asbestos	2836-19-C34
	1089	2' x 4' Dot Ceiling Tile	Non Asbestos	2836-19-C35
	1089	2' x 4' Dot Ceiling Tile	Non Asbestos	2836-19-C36
HC-13	1108	2' x 4' Strata Dot Ceiling Tile	Non Asbestos	2836-19-C37
	1108	2' x 4' Strata Dot Ceiling Tile	Non Asbestos	2836-19-C38
	1108	2' x 4' Strata Dot Ceiling Tile	Non Asbestos	2836-19-C39
HC-14	1126	Plaster Base Coat on Top of Ceiling Tile	Non Asbestos	2836-19-C40
	1126	Plaster Base Coat on Top of Ceiling Tile	Non Asbestos	2836-19-C41
	1126	Plaster Base Coat on Top of Ceiling Tile	Non Asbestos	2836-19-C42
	2102	Plaster Base Coat on Top of Ceiling Tile	Non Asbestos	2836-19-C52
HC-15	2005A	2' x 4' Small Scattered Strata Ceiling Tile	Non Asbestos	2836-19-C43
	2005A	2' x 4' Small Scattered Strata Ceiling Tile	Non Asbestos	2836-19-C44
	2005A	2' x 4' Small Scattered Strata Ceiling Tile	Non Asbestos	2836-19-C45

HM No.	Drawing Location	Material(s)	ACM	Sample No.
HC-16	2006	2' x 4' Thin Horizontal Strata Ceiling Tile	Non Asbestos	2836-19-C46
	2006	2' x 4' Thin Horizontal Strata Ceiling Tile	Non Asbestos	2836-19-C47
	2006	2' x 4' Thin Horizontal Strata Ceiling Tile	Non Asbestos	2836-19-C48
HC-17	2046	2' x 4' Dotted Ceiling Tile	Non Asbestos	2836-19-C49
	2046	2' x 4' Dotted Ceiling Tile	Non Asbestos	2836-19-C50
	2046	2' x 4' Dotted Ceiling Tile	Non Asbestos	2836-19-C51
HC-18	2050D	2' x 2' Transite Dot Ceiling Tile	20% Chrysotile	2836-19-C53
HC-19	1080	Drywall & Joint Compound	Non Asbestos	2836-19-C54
	1090	Drywall & Joint Compound	Non Asbestos	2836-19-C55
	1092	Drywall & Joint Compound	Non Asbestos	2836-19-C56
HC-20	2047	Drywall & Joint Compound	Non Asbestos	2836-19-C57
	2047	Drywall & Joint Compound	Non Asbestos	2836-19-C58
	2047	Drywall & Joint Compound	Non Asbestos	2836-19-C59
THERMAL MATERIALS				
HT-01	1009	Pressed Cellulose with Black Paper Pipe Insulation on the Drain Line	Non Asbestos	2836-19-T01
	1009	Pressed Cellulose with Black Paper Pipe Insulation on the Drain Line	Non Asbestos	2836-19-T02
	2110B	Pressed Cellulose with Black Paper Pipe Insulation on the Drain	Non Asbestos	2836-19-T75
HT-02	1020	Magblock Pipe Insulation on the Hot Water Heating Return Line	15% Chrysotile	2836-19-T12
HT-03		Homogeneous number not in use		
HT-04	1010	Insulated Cement Fitting on the Heating System	45% Chrysotile	2836-19-T04
HT-05	1014	Parging Cement around Metal Sheet on Wall	45% Chrysotile	2836-19-T05
	1014	Parging Cement around Metal Sheet on Wall	Not Analyzed	2836-19-T06
	1014	Parging Cement around Metal Sheet on Wall	Not Analyzed	2836-19-T07
HT-06	1014	Aircell Pipe Insulation on the Domestic Hot Water System	65% Chrysotile	2836-19-T08
	1014	Aircell Pipe Insulation on the Domestic Hot Water System	Not Analyzed	2836-19-T09
	1014	Aircell Pipe Insulation on the Domestic Hot Water System	Not Analyzed	2836-19-T10
HT-07	1014	Cardboard Pipe Insulation on the Domestic Cold Water System	Non Asbestos	2836-19-T11
	1087	Cardboard Pipe Insulation with Canvas on the Domestic Cold Water System	25% Chrysotile	2836-19-T35
	1014	Cardboard Pipe Insulation with Black Paper on the Domestic Cold Water System	50% Chrysotile	2836-19-T60
	H003	Cardboard Pipe Insulation with Black Paper on the Domestic Cold Water System	50% Chrysotile	2836-19-T73
HT-08	-	Fibreglass	Non Asbestos	-
HT-09	1021	Cardboard with Black Paper Pipe Insulation on the Domestic Cold Water System	Non Asbestos	2836-19-T13
	1022A	Cardboard with Black Paper Pipe Insulation on the Domestic Cold Water System	Non Asbestos	2836-19-T15
	1025	Cardboard with Black Paper Pipe Insulation on the Domestic Cold Water System	Non Asbestos	2836-19-T19
HT-10	1022A	White Block Tank Insulation – Lower Tank	20% Chrysotile	2836-19-T16

HM No.	Drawing Location	Material(s)	ACM	Sample No.
	1022A 1022A	White Block Tank Insulation – Lower Tank White Block Tank Insulation – Pressure Release Tank	45% Chrysotile 45% Chrysotile	2836-19-T17 2836-19-T18
HT-11	1026 1039 1074	Canvas with Black Paper and Parging Cement over Fibreglass Duct Canvas with Black Paper and Parging Cement over Fibreglass Duct Canvas with Black Paper and Parging Cement over Fibreglass Duct	45% Chrysotile 45% Chrysotile 65% Chrysotile	2836-19-T20 2836-19-T21 2836-19-T25
HT-12	1039 1039 1039	Pipe Sleeve Pipe Sleeve Pipe Sleeve	Non Asbestos Non Asbestos Non Asbestos	2836-19-T22 2836-19-T23 2836-19-T24
HT-13	1086 1086 1086	Vibration Gasket – HVAC Fan Unit Vibration Gasket – HVAC Fan Unit Vibration Gasket – HVAC Fan Unit	70% Chrysotile Not Analyzed Not Analyzed	2836-19-T26 2836-19-T27 2836-19-T28
HT-14	1084 1084 1084	Internal Paper from Fire Door Internal Paper from Fire Door Internal Paper from Fire Door	65% Chrysotile Not Analyzed Not Analyzed	2836-19-T29 2836-19-T30 2836-19-T31
HT-15	1087 1087 1087	Parging Cement from Air Line Ends Parging Cement from Air Line Ends Parging Cement from Air Line Ends	55% Chrysotile Not Analyzed Not Analyzed	2836-19-T32 2836-19-T33 2836-19-T34
HT-16	1118 1118 1118	Insulated Cement Fitting on the Hot Water Heating Supply Insulated Cement Fitting on the Water Supply Insulated Cement Fitting on the Water Supply	35% Chrysotile Not Analyzed Not Analyzed	2836-19-T36 2836-19-T37 2836-19-T38
HT-17	1118 1118 1118	Insulated Cement Fitting on the Domestic Hot Water Line Insulated Cement Fitting on the Domestic Hot Water Line Insulated Cement Fitting on the Domestic Hot Water Line	60% Chrysotile Not Analyzed Not Analyzed	2836-19-T39 2836-19-T40 2836-19-T41
HT-18	1117 1117 1117	Insulated Cement Fitting on the Hot Water Heating Return Line Insulated Cement Fitting on the Hot Water Heating Return Line Insulated Cement Fitting on the Hot Water Heating Return Line	60% Chrysotile Not Analyzed Not Analyzed	2836-19-T42 2836-19-T43 2836-19-T44
HT-19	1021 H004B H004B H004B	Insulated Cement Fitting on the Domestic Cold Water Line Insulated Cement Fitting on the Domestic Cold Water Line Insulated Cement Fitting on the Domestic Cold Water Line Insulated Cement Fitting on the Domestic Cold Water Line	35% Chrysotile 60% Chrysotile Not Analyzed Not Analyzed	2836-19-T14 2836-19-T45 2836-19-T46 2836-19-T47
HT-20	H004B H004B H004B 2095	Insulated Cement Fitting on the Low Pressure Steam Line Insulated Cement Fitting on the Low Pressure Steam Line Insulated Cement Fitting on the Low Pressure Steam Line Insulated Cement Fitting on the Low Pressure Steam Line to HVAC	60% Chrysotile Not Analyzed Not Analyzed 65% Chrysotile	2836-19-T48 2836-19-T49 2836-19-T50 2836-19-T74



HM No.	Drawing Location	Material(s)	ACM	Sample No.
HT-21	1009 H004B	Insulated Cement Fitting on the Drain Line Insulated Cement Fitting on the Drain System	45% Chrysotile 60% Chrysotile	2836-19-T03 2836-19-T51
	H004B	Insulated Cement Fitting on the Drain System	Not Analyzed	2836-19-T52
	H004B	Insulated Cement Fitting on the Drain System	Not Analyzed	2836-19-T53
HT-22	2048	White Block Insulation – Hot Water Tank Insulation	15% Amosite & 5% Chrysotile	2836-19-T54
	2048	White Block Insulation – Hot Water Tank Insulation	Not Analyzed	2836-19-T55
	2048	White Block Insulation – Hot Water Tank Insulation	Not Analyzed	2836-19-T56
HT-23	2003	Insulated Cement Fitting on the HVAC System	Non Asbestos	2836-19-T57
	2003	Insulated Cement Fitting on the HVAC System	Non Asbestos	2836-19-T58
	2003	Insulated Cement Fitting on the HVAC System	Non Asbestos	2836-19-T59
HT-24	2091	Debris located beside HVAC unit	Non Asbestos	2836-19-T61
	2091	Debris located beside HVAC unit	25% Chrysotile	2836-19-T62
	2091	Debris located beside HVAC unit	Not Analyzed	2836-19-T63
HT-25	2055	Fire Door Insulation - Cork	Non Asbestos	2836-19-T64
	2055	Fire Door Insulation - Cork	Non Asbestos	2836-19-T65
	2055	Fire Door Insulation - Cork	Non Asbestos	2836-19-T66
HT-26	2055	Black Paper over Fibreglass – Return System to Fan Unit	Non Asbestos	2836-19-T67
	2055	Black Paper over Fibreglass – Return System to Fan Unit	Non Asbestos	2836-19-T68
	2055	Black Paper over Fibreglass – Return System to Fan Unit	Non Asbestos	2836-19-T69
HT-27	2108B	Tar Paper over Fibreglass - Ceiling Cavity	Non Asbestos	2836-19-T70
	2108B	Tar Paper over Fibreglass - Ceiling Cavity	Non Asbestos	2836-19-T71
	2108B	Tar Paper over Fibreglass - Ceiling Cavity	Non Asbestos	2836-19-T72
SURFACING MATERIAL				
HS-01	1001	Spray-on Fireproofing	Non Asbestos	2836-19-S01
	1001	Spray-on Fireproofing	Non Asbestos	2836-19-S02
	1001	Spray-on Fireproofing	Non Asbestos	2836-19-S03
	1001	Spray-on Fireproofing	Non Asbestos	2836-19-S04
	1001	Spray-on Fireproofing	Non Asbestos	2836-19-S05
MANUFACTURED MATERIAL				
HM-01	1008	Pipe Sealant	Non Asbestos	2836-19-M01
	1008	Pipe Sealant	Non Asbestos	2836-19-M02
	1008	Pipe Sealant	Non Asbestos	2836-19-M03
HM-02	1010	White Interior Door Caulking	Non Asbestos	2836-19-M04
	1010	White Interior Door Caulking	Non Asbestos	2836-19-M05
	1010	White Interior Door Caulking	Non Asbestos	2836-19-M06
HM-03	1011	Silver Sink Undercoating	Non Asbestos	2836-19-M07
	1011	Silver Sink Undercoating	Non Asbestos	2836-19-M08
	1011	Silver Sink Undercoating	Non Asbestos	2836-19-M09



HM No.	Drawing Location	Material(s)	ACM	Sample No.
HM-04	1011	Black Sound Dampening Pad	Non Asbestos	2836-19-M10
	1011	Black Sound Dampening Pad	Non Asbestos	2836-19-M11
	1011	Black Sound Dampening Pad	Non Asbestos	2836-19-M12
HM-05	1021A	Epoxy Coating on Floor	Non Asbestos	2836-19-M13
	1021A	Epoxy Coating on Floor	Non Asbestos	2836-19-M14
	1021A	Epoxy Coating on Floor	Non Asbestos	2836-19-M15
HM-06	1030	Pressed Cellulose Board	Non Asbestos	2836-19-M16
	1030	Pressed Cellulose Board	Non Asbestos	2836-19-M17
	1030	Pressed Cellulose Board	Non Asbestos	2836-19-M18
HM-07	1037	Acoustical Wall Tile Brown Mastic	Non Asbestos Non Asbestos	2836-19-M19
	1037	Acoustical Wall Tile Brown Mastic	Non Asbestos Non Asbestos	2836-19-M20
	1037	Acoustical Wall Tile Brown Mastic	Non Asbestos Non Asbestos	2836-19-M21
HM-08	1094	Sound Dampening Pad Under Sink	Non Asbestos	2836-19-M22
	1094	Sound Dampening Pad Under Sink	Non Asbestos	2836-19-M23
	1094	Sound Dampening Pad Under Sink	Non Asbestos	2836-19-M24
HM-09	1108	Interior Window Caulking	Non Asbestos	2836-19-M25
	1108	Interior Window Caulking	Non Asbestos	2836-19-M26
	1108	Interior Window Caulking	Non Asbestos	2836-19-M27
HM-10	1119	Black Paper on top of Transformer	Non Asbestos	2836-19-M28
	1119	Black Paper on top of Transformer	Non Asbestos	2836-19-M29
	1119	Black Paper on top of Transformer	Non Asbestos	2836-19-M30
HM-11	1137	White Interior Window Caulking	<1% Chrysotile	2836-19-M31
	1137	White Interior Window Caulking	<1% Chrysotile	2836-19-M32
	1137	White Interior Window Caulking	<1% Chrysotile	2836-19-M33
	1137	White Interior Window Caulking	0.25% Chrysotile	2836-19-M31PC
	1137	White Interior Window Caulking	0.25% Chrysotile	2836-19-M32PC
	1137	White Interior Window Caulking	<0.2% Chrysotile	2836-19-M33PC
HM-12	1137	Yellow Expansion Joint Material	Non Asbestos	2836-19-M34
	1137	Yellow Expansion Joint Material	Non Asbestos	2836-19-M35
	1137	Yellow Expansion Joint Material	Non Asbestos	2836-19-M36
HM-13	1139	Fire Stop Putty	Non Asbestos	2836-19-M37
	1139	Fire Stop Putty	Non Asbestos	2836-19-M38
	1139	Fire Stop Putty	Non Asbestos	2836-19-M39
HM-14	2007A	White Interior Window Caulking	Non Asbestos	2836-19-M40
	2007A	White Interior Window Caulking	Non Asbestos	2836-19-M41
	2007A	White Interior Window Caulking	Non Asbestos	2836-19-M42
HM-15	2012	Black with Brown Interior Window Caulking	Non Asbestos	2836-19-M43
	2012	Black with Brown Interior Window Caulking	Non Asbestos	2836-19-M44
	2012	Black with Brown Interior Window Caulking	Non Asbestos	2836-19-M45
HM-16	1043	Static Shield Paper	Non Asbestos	2836-19-M46
	1043	Static Shield Paper	Non Asbestos	2836-19-M47
	1043	Static Shield Paper	Non Asbestos	2836-19-M48
HM-17	2080	Sink Undercoating - Yellow	Non Asbestos	2836-19-M49
	2080	Sink Undercoating - Yellow	Non Asbestos	2836-19-M50
	2080	Sink Undercoating - Yellow	Non Asbestos	2836-19-M51
HM-18	M003C	Grey Interior Facing Window Caulking	Non Asbestos	2836-19-M52
	M003C	Grey Interior Facing Window Caulking	Non Asbestos	2836-19-M53
	M003C	Grey Interior Facing Window Caulking	Non Asbestos	2836-19-M54

Notes for Table 6-1:*HF – homogeneous flooring material**HW - homogeneous wall material**HC – homogeneous ceiling material**HT – homogeneous thermal insulation material**HM – homogeneous manufactured material**HS – homogeneous surfacing material**Shading indicates Asbestos was detected above 0.50%.**The complete laboratory results are provided in Appendix A.*

The results of the assessment and analysis indicate that forty-one (41) homogeneous materials contain asbestos. A summary of the asbestos-containing materials, their quantities and their locations within Building 52 are presented below in Table 6-2. Further, Table 6-3 summarizes the quantities of asbestos containing materials (by system).

TABLE 6-2: SUMMARY OF ASBESTOS MATERIAL LOCATIONS AND QUANTITIES WITHIN BUILDING 52.

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
First Floor				
1001	Canteen Room	HT-02 HT-20 HT-07 HT-04 HT-02 HT-02 HT-16 HT-02 HT-02 HT-18 HT-06 HT-17 HT-02	30 LF 2 Units 64 LF 10 Units 80 LF 30 LF 12 Units 80 LF 30 LF 10 Units 64 LF 2 Units 20 LF	10" Magblock pipe insulation on the HPS Insulated cement fittings on the HPS Cardboard with black paper on the DCW Insulated cement fittings on the DCW 3" Magblock pipe insulation on the HWH supply 8" Magblock pipe insulation on the HWH supply Insulated cement fittings on the HWH supply 3" Magblock pipe insulation on the HWH return 8" Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return Aircell pipe insulation on the DHW Insulated cement fittings on the DHW Magblock pipe insulation on the LPS
1002	Office Corridor	HF-03	128 SF	12" x 12" Salmon with White Streak Floor Tile
1003	"A Crew Lead Office"	HF-03	150 SF	12" x 12" Salmon with White Streak Floor Tile
1004	Office	HF-03	120 SF	12" x 12" Salmon with White Streak Floor Tile
1005	SRO Office	HF-03	150 SF	12" x 12" Salmon with White Streak Floor Tile
1006	ASO Office	HF-03	220 SF	12" x 12" Salmon with White Streak Floor Tile
1007	Tool Room / Computer Stations	HF-03 HT-02 HT-04	540 SF 30 LF 15 Units	12" x 12" Salmon with White Streak Floor Tile Magblock pipe insulation on the HWH Insulated cement fittings on the HWH
1008	Pump Room	HF-03	100 SF	12" x 12" Salmon with White Streak Floor Tile
1009	Office	HW-06 HT-21 HT-02 HT-02	80 SF 2 Units 10 LF 10 LF	Transite panel on the South wall Insulated cement fittings on the Drain system Magblock pipe insulation on the HWH supply Magblock pipe insulation on the HWH return

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
		HT-02	10 LF	Magblock pipe insulation on the Steam
		HT-06	10 LF	Aircell pipe insulation on the DHW
		HT-07	10 LF	Cardboard with black paper on the DCW
1010	SNAG Recovery Debrief Room Reception Desk	HW-06	60 SF	Transite wall panel
		HT-02	112 LF	Magblock pipe insulation on the HWH supply
		HT-16	22 Units	Insulated cement fittings on the HWH supply
		HT-02	60 LF	Magblock pipe insulation on the HWH return
		HT-02	40 LF	Magblock pipe insulation on the Steam
		HT-06	40 LF	Aircell pipe insulation on the DHW
		HT-07	40 LF	Cardboard with black paper on the DCW
1010A	Front Entranceway	HW-06	48 SF	Transite wall panel
1011	Kitchen	HT-07	15 LF	Cardboard with black paper on the DCW
		HT-04	1 Unit	Insulated cement fittings on the DCW
		HT-06	15 LF	Aircell pipe insulation on the DHW
		HT-17	2 Units	Insulated cement fittings on the DHW
		HT-02	15 LF	3" Magblock pipe insulation on the HWH supply
		HT-16	3 Units	Insulated cement fittings on the HWH supply
		HT-02	20 LF	3" Magblock pipe insulation on the HWH return
		HT-18	5 Units	Insulated cement fittings on the HWH return
		HT-14	2 Units	Internal Paper Layer within Fire Door
1012	Office	HW-06	30 SF	Transite wall panel
		HT-02	18 LF	Magblock pipe insulation on the HWH supply
		HT-16	6 Units	Insulated cement fittings on the HWH supply
		HT-02	12 LF	Magblock pipe insulation on the HWH return
		HT-02	12 LF	Magblock pipe insulation on the Steam
		HT-06	12 LF	Aircell pipe insulation on the DHW
		HT-07	12 LF	Cardboard with black paper on the DCW
1013	Office	HT-02	60 LF	Magblock pipe insulation on the HWH supply
		HT-16	11 Units	Insulated cement fittings on the HWH supply
		HT-02	60 LF	Magblock pipe insulation on the HWH return
		HT-18	8 Units	Insulated cement fittings on the HWH return
		HT-02	20 LF	Magblock pipe insulation on the Steam
		HT-20	1 Unit	Insulated cement fittings on the Steam
		HT-06	20 LF	Aircell pipe insulation on the DHW
		HT-17	1 Unit	Insulated cement fittings on the DHW
		HT-07	20 LF	Cardboard with black paper on the DCW
		HT-04	1 Unit	Insulated cement fittings on the DCW
1014	Corridor	HT-02	5 LF	Magblock pipe insulation on the HWH supply
		HT-02	5 LF	Magblock pipe insulation on the HWH return
		HT-02	5 LF	Magblock pipe insulation on the Steam
		HT-06	5 LF	Aircell pipe insulation on the DHW
		HT-07	5 LF	Cardboard with black paper on the DCW
		HT-05	2 LF	Parging Material - North Wall on Metal Plate
1015	SGT's Office	HF-03	84 SF	12" x 12" Salmon with White Streak Floor Tile
1016	Office	HF-03	100 SF	12" x 12" Salmon with White Streak Floor Tile
1017	AS03 Office	HF-03	100 SF	12" x 12" Salmon with White Streak Floor Tile
		HT-02	14 LF	Magblock pipe insulation on the HWH return
		HT-04	1 Unit	Insulated cement fittings on the HWH return

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
1018	AS0 Office	HF-03 HT-02 HT-04	100 SF 10 LF 2 Units	12" x 12" Salmon with White Streak Floor Tile Magblock pipe insulation on the HWH Insulated cement fittings on the HWH
1019	Telecomm Room	No asbestos-containing materials were analytically determined to be present.		
1020	Office Hallway	HF-03 HT-02 HT-18 HT-02 HT-16 HT-02 HT-04	360 SF 6 LF 2 Units 10 LF 2 Units 4 LF 4 Units	12" x 12" Salmon with White Streak Floor Tile Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return Magblock pipe insulation on the HWH supply Insulated cement fittings on the HWH supply Magblock pipe insulation on an unknown system Insulated cement fittings on an unknown system
1021A	Men's Washroom Entrance	HT-02 HT-02 HT-14	6 LF 6 LF 1 Unit	Magblock pipe insulation on the HWH return Magblock pipe insulation on the HWH supply Internal Paper Layer within Fire Door
1021	Men's Washroom	HT-02 HT-18 HT-02 HT-16 HT-06 HT-17 HT-04	28 LF 2 Units 28 LF 2 Units 23 LF 2 Units 1 Unit	Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return Magblock pipe insulation on the HWH supply Insulated cement fittings on the HWH supply Aircell pipe insulation on the DHW Insulated cement fittings on the DHW Insulated cement fittings on the DCW
1022A	Mechanical Room	HT-02 HT-18 HT-02 HT-16 HT-02 HT-20 HT-04 HT-10 HT-10 HT-14	25 LF 3 Units 25 LF 3 Units 1 LF 1 Unit 3 Units 37 SF 37 SF 2 Units	Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return Magblock pipe insulation on the HWH supply Insulated cement fittings on the HWH supply Magblock pipe insulation on the LPS Insulated cement fittings on the LPS Insulated cement fittings on the DCW Parging Cement - Pressure Release tank insulation Parging Cement - Condensate tank insulation Internal Paper Layer within Fire Door
1022	Fan Room / Mechanical Room	HW-06 HW-06 HT-02 HT-18 HT-02 HT-16 HT-02 HT-07 HT-04 HT-04 HT-13	900 SF 216 SF 60 LF 8 Units 60 LF 10 Units 10 LF 10 LF 4 Units 1 Unit 1 Unit	Transite wall panel Transite ceiling panel Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return Magblock pipe insulation on the HWH supply Insulated cement fittings on the HWH supply Magblock pipe insulation on the Steam Cardboard with black paper on the DCW Insulated cement fittings on the DCW Insulated cement debris - North Wall Vibration Gasket HVAC unit
1023	Wash Bay Recovery	No access to this room at the time of inspection		
1024	Electrical Room	HT-14	2 Units	Internal Paper Layer within Fire Door
1025	Mechanical Room	HT-04 HT-10 HT-10 HT-02 HT-16 HT-02 HT-18 HT-02	1 Unit 37 SF 37 SF 20 LF 3 Units 19 LF 3 Units 7 LF	Insulated cement fittings on the DCW Boiler tank insulation Pressure Release tank insulation Magblock pipe insulation on the HWH supply Insulated cement fittings on the HWH supply Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return Magblock pipe insulation on the HPS

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
		HT-20	3 Units	Insulated cement fittings on the HPS
		HT-02	5 LF	Magblock pipe insulation on the LPS
1026	Fan Room	HW-06	750 SF	Transite wall panel
		HW-06	156 SF	Transite ceiling panel
		HT-11	142 SF	Canvas with Black Paper & Parging over Fibreglass on the HVAC duct insulation
		HT-02	28 LF	Magblock pipe insulation on the HWH return
		HT-18	6 Units	Insulated cement fittings on the HWH return
		HT-02	28 LF	Magblock pipe insulation on the HWH supply
		HT-16	6 Units	Insulated cement fittings on the HWH supply
		HT-02	13 LF	Magblock pipe insulation on the HPS
		HT-06	13 LF	Aircell pipe insulation on the DHW
		HT-07	54 LF	Cardboard with Black Paper on the DCW
		HT-04	6 Units	Insulated cement fittings on the DCW
		HT-13	1 Unit	Vibration Gasket HVAC unit
		HT-14	2 Units	Internal Paper Layer within Fire Door
1027	Electrical Storage Room	HT-06	20 LF	Aircell pipe insulation on the DHW
		HT-07	20 LF	Cardboard with Black Paper on the DCW
		HT-02	12 LF	Magblock pipe insulation on the HWH supply
			1 Unit	Vibration Gasket HVAC unit
1028	Offices	HT-02	27 LF	Magblock pipe insulation on the HWH return
		HT-18	3 Units	Insulated cement fittings on the HWH return
		HT-02	15 LF	Magblock pipe insulation on the HWH supply
		HT-16	2 Units	Insulated cement fittings on the HWH supply
1029	Cafeteria/ Lunchroom	No asbestos-containing materials were analytically determined to be present.		
1030	Aircraft & Supply Flight	HW-06	150 SF	Transite wall panel
		HT-07	138 LF	Cardboard with Black Paper on the DCW
		HT-04	11 Units	Insulated cement fittings on the DCW
		HT-06	125 LF	Aircell pipe insulation on the DHW
		HT-17	11 Units	Insulated cement fittings on the DHW
		HT-02	221 LF	Magblock pipe insulation on the HWH return
		HT-18	19 Units	Insulated cement fittings on the HWH return
		HT-02	238 LF	Magblock pipe insulation on the HWH supply
		HT-16	33 Units	Insulated cement fittings on the HWH supply
		HT-02	40 LF	Magblock pipe insulation on the HPS
		HT-21	6 Units	Insulated cement fittings on the Drain system
1031	Office	HF-12	240 SF	9" x 9" Green with White Streak Floor Tile - Possible Second Layer
		HT-02	28 LF	Magblock pipe insulation on the HWH return
		HT-18	5 Units	Insulated cement fittings on the HWH return
		HT-02	20 LF	Magblock pipe insulation on the HWH supply
		HT-16	1 Unit	Insulated cement fittings on the HWH supply
		HT-07	20 LF	Cardboard with Black Paper on the DCW
		HT-04	1 Unit	Insulated cement fittings on the DCW
		HT-06	20 LF	Aircell pipe insulation on the DHW
		HT-17	1 Unit	Insulated cement fittings on the DHW
		HT-02	20 LF	Magblock pipe insulation on the Steam
		HT-04	1 Unit	Insulated cement fittings on the Steam
		HT-02	12 LF	Magblock pipe insulation on a disconnected line
		HT-04	4 Units	Insulated cement fittings on a disconnected line
1032	Chief Warrnet Officer's Office	HF-12	216 SF	9" x 9" Green with White Streak Floor Tile – Second layer

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
		HT-02 HT-16 HT-02 HT-18 HT-07 HT-06 HT-02 -	34 LF 4 Units 34 LF 3 Units 18 LF 18 LF 18 LF -	Magblock pipe insulation on the HWH supply Insulated cement fittings on the HWH supply Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return Cardboard with Black Paper on the DCW Aircell pipe insulation on the DHW Magblock pipe insulation on the HPS Cloth wiring – suspect ACM
1033	IT Department - Lab Area	HF-14 HW-06 HT-02 HT-02 HT-16	192 SF 180 SF 12 LF 19 LF 2 Units	Mastic (beneath floor tile) Transite wall panel – South wall Magblock pipe insulation on the HWH return Magblock pipe insulation on the HWH supply Insulated cement fittings on the HWH supply
1034	IT Department - Storage Room	HF-12 HF-13 HT-02 HT-18	202 SF 50 SF 15 LF 2 Units	9" x 9" Green with White Floor Tile – Suspect beneath carpet 9" x 9" Grey with White Floor Tile – Suspect beneath carpet Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return
1035	IT Help Desk	HF-12 HF-13 HT-02 HT-18 HT-02 HT-16 HT-02 HT-04 HT-07 HT-04 HT-21	300 SF 100 SF 32 LF 6 Units 40 LF 6 Units 20 LF 1 Unit 20 LF 1 Unit 3 Units	9" x 9" Green with White Floor Tile 9" x 9" Grey with White Floor Tile Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return Magblock pipe insulation on the HWH supply Insulated cement fittings on the HWH supply Magblock pipe insulation on the Steam Insulated cement fittings on the Steam Cardboard with Black Paper on the DCW Insulated cement fittings on the DCW Insulated cement fittings on the Drain line
1036	Office	HF-14 HT-02 HT-02 HT-02 HT-07 HT-07 HT-02	120 SF 6 LF 6 LF 6 LF 6 LF 6 LF 6 LF	Mastic (beneath floor tile) Magblock pipe insulation on the HWH return Magblock pipe insulation on the HWH supply Magblock pipe insulation on the Steam Cardboard with Black Paper on the DCW Cardboard with Black Paper on the DCW Magblock pipe insulation on a disconnected line
1037	Mechanical Room	HT-02 HT-16 HT-07 HT-04	30 LF 2 Units 18 LF 1 Unit	Magblock pipe insulation on the HWH supply Insulated cement fittings on the HWH supply Cardboard with Black Paper on the DCW Insulated cement fittings on the DCW
1038	Mechanical Room	HT-10 HT-10 HT-02 HT-02 HT-20 HT-02 HT-20 HT-06 HT-07 HT-19 HT-11	38 SF 38 SF 5 LF 20 LF 3 Units 30 LF 4 Units 4 LF 20 LF 4 Units 88 SF	Lower Boiler tank insulation Pressure Release tank insulation Magblock pipe insulation on the HWH return Magblock pipe insulation on the HPS Insulated cement fittings on the HPS Magblock pipe insulation on the LPS Insulated cement fittings on the LPS Aircell pipe insulation on the DHW Cardboard with Black Paper on the DCW Insulated cement fittings on the DCW Fibreglass with Parging Cement on the duct insulation

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
1039	Fan Room	HW-06 HW-06 HT-11 HT-02 HT-18 HT-02 HT-20 HT-06 HT-17 HT-07 HT-19 HT-13	1320 SF 260 SF 192 SF 35 LF 3 Units 13 LF 3 Units 45 LF 5 Units 50 LF 5 Units 1 Unit	Transite wall panel Transite ceiling panel Canvas with Black Paper and Parging over Fibreglass on the duct insulation Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return Magblock pipe insulation on the HPS Insulated cement fittings on the HPS Aircell pipe insulation on the DHW Insulated cement fittings on the DHW Cardboard with Black Paper on the DCW Insulated cement fittings on the DCW Vibration Gasket HVAC unit
1040	Lunch Room	HT-02 HT-16 HT-02 HT-18 HT-21	110 LF 6 Units 21 LF 2 Units 2 Units	Magblock pipe insulation on the HWH supply Insulated cement fittings on the HWH supply Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return Insulated cement fittings on the Drain line
1041	Battery Storage/ Charge Room	HT-02 HT-02 HT-04 HT-06 HT-21	46 LF 25 LF 4 Units 25 LF 1 Unit	3" Magblock pipe insulation on the HWH return 8" Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return Aircell pipe insulation on the DHW Insulated cement fittings on the Drain line
1042	AVSO Office	HT-02 HT-02 HT-04 HT-06	25 LF 10 LF 2 Units 10 LF	3" Magblock pipe insulation on the HWH return 8" Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return Aircell pipe insulation on the DHW
1043	Corridor	HT-21	1 Unit	Insulated cement fittings on the Drain line
1044	AVS Supervisor	HT-02 HT-16	8 LF 2 Units	8" Magblock pipe insulation on the HWH supply Insulated cement fittings on the HWH supply
1045	Office	HT-06 HT-17 HT-07 HT-04	22 LF 4 Units 22 LF 4 Units	Aircell pipe insulation on the DHW Insulated cement fittings on the DHW Cardboard with Black Paper on the DCW Insulated cement fittings on the DCW
1046	Office	HF-29 HT-02 HT-02 HT-18 HT-02 HT-02 HT-16 HT-02 HT-06 HT-07 HT-04 HT-21 -	2500 SF 142 LF 60 LF 29 Units 142 LF 60 LF 26 Units 60 LF 60 LF 85 LF 4 Units 3 Units 2 Units	Mastic (beneath floor tile) 3" Magblock pipe insulation on the HWH return 8" Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return 3" Magblock pipe insulation on the HWH supply 8" Magblock pipe insulation on the HWH supply Insulated cement fittings on the HWH supply 8" Magblock pipe insulation on the HPS Aircell pipe insulation on the DHW Cardboard with Black Paper on the DCW Insulated cement fittings on the DCW Insulated cement fittings on the Drain line Fire blanket – Suspect ACM
1047	Equipment Room	No asbestos-containing materials were analytically determined to be present.		
1047A	Mezzanine Level	No asbestos-containing materials were analytically determined to be present.		
1048	Server	No asbestos-containing materials were analytically determined to be present.		
1049	Server Control Room	No asbestos-containing materials were analytically determined to be present.		

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
1050	HAZMAT Supplies Storage Room	HT-02	27 LF	3" Magblock pipe insulation on the HWH supply
		HT-02	12 LF	8" Magblock pipe insulation on the HWH supply
		HT-16	2 Units	Insulated cement fittings on the HWH supply
		HT-02	27 LF	3" Magblock pipe insulation on the HWH return
		HT-02	16 LF	8" Magblock pipe insulation on the HWH return
		HT-18	2 Units	Insulated cement fittings on the HWH return
		HT-02	27 LF	8" Magblock pipe insulation on the HPS
		HT-20	1 Unit	Insulated cement fittings on the HPS
		HT-06	27 LF	Aircell pipe insulation on the DHW
		HT-17	1 Unit	Insulated cement fittings on the DHW
		HT-07	27 LF	Cardboard with Black Paper on the DCW
		HT-04	1 Unit	Insulated cement fittings on the DCW
		HT-14	1 Unit	Internal Paper Layer within Fire Door
1051	Storage	HF-03	400 SF	12" x 12" Salmon with White Streak Floor Tile
		HT-02	15 LF	3" Magblock pipe insulation on the HWH supply
		HT-02	33 LF	8" Magblock pipe insulation on the HWH supply
		HT-16	12 Units	Insulated cement fittings on the HWH supply
		HT-02	15 LF	3" Magblock pipe insulation on the HWH return
		HT-02	40 LF	8" Magblock pipe insulation on the HWH return
		HT-18	3 Units	Insulated cement fittings on the HWH return
		HT-02	15 LF	8" Magblock pipe insulation on the HPS
		HT-20	1 Unit	Insulated cement fittings on the HPS
		HT-06	22 LF	Aircell pipe insulation on the DHW
		HT-17	1 Unit	Insulated cement fittings on the DHW
		HT-07	21 LF	Cardboard with Black Paper on the DCW
		HT-04	1 Unit	Insulated cement fittings on the DCW
		HT-21	3 Units	Insulated cement fittings on the Drain line
1052	Electrical Room	HT-14	1 Unit	Internal Paper Layer within Fire Door
1053	Women's Change Room	HF-03	360 SF	12" x 12" Salmon with White Streak Floor Tile
		HT-02	55 LF	Magblock pipe insulation on the HWH return
		HT-18	2 Units	Insulated cement fittings on the HWH return
		HT-02	28 LF	Magblock pipe insulation on the HWH supply
		HT-16	1 Unit	Insulated cement fittings on the HWH supply
		HT-06	28 LF	Aircell pipe insulation on the DHW
		HT-17	2 Units	Insulated cement fittings on the DHW
		HT-07	28 LF	Cardboard with Black Paper on the DCW
		HT-04	2 Units	Insulated cement fittings on the DCW
		HT-14	1 Unit	Internal Paper Layer within Fire Door
1054	Corridor to Women's Change Room	HT-14	1 Unit	Internal Paper Layer within Fire Door
1054B	Women's Shower	HT-07	15 LF	Cardboard with Black Paper on the DCW
		HT-04	2 Units	Insulated cement fittings on the DCW
		HT-02	8 LF	Magblock pipe insulation on the HWH supply
		HT-02	8 LF	Magblock pipe insulation on the HWH return
1055	Women's Washroom	HT-02	21 LF	Magblock pipe insulation on the HWH supply
		HT-16	1 Unit	Insulated cement fittings on the HWH supply
		HT-02	9 LF	Magblock pipe insulation on the HWH return
		HT-18	3 Units	Insulated cement fittings on the HWH return
		HT-06	13 LF	Aircell pipe insulation on the DHW
		HT-07	13 LF	Cardboard with Black Paper on the DCW
1056	Supply Room	HF-23	72 SF	9" x 9" Olive Green with White Streak Floor Tile
		HF-22	216 SF	9" x 9" White with Black Streak Floor Tile
		HW-06	270 SF	Transite wall panel – North Wall

<i>FUNCTIONAL SPACE ID #</i>	<i>ROOM NAME/NUMBER</i>	<i>HOMOGENEOUS MATERIAL No.</i>	<i>QUANTITY</i>	<i>ASBESTOS CONTAINING MATERIALS DESCRIPTION</i>
		HT-02	60 LF	Magblock pipe insulation on the HWH supply
		HT-16	6 Units	Insulated cement fittings on the HWH supply
		HT-02	60 LF	Magblock pipe insulation on the HWH return
		HT-18	4 Units	Insulated cement fittings on the HWH return
		HT-06	23 LF	Aircell pipe insulation on the DHW
		HT-17	2 Units	Insulated cement fittings on the DHW
		HT-07	23 LF	Cardboard with Black Paper on the DCW
		HT-04	4 Units	Insulated cement fittings on the DCW
1057	Canteen	HF-23	63 SF	9" x 9" Olive Green with White Streak Floor Tile
		HF-22	178 SF	9" x 9" White with Black Streak Floor Tile
		HF-19	11 SF	Mastic - Under Beige with Black Streak FT
		HW-06	210 SF	Transite wall panel – North Wall
		HT-02	49 LF	Magblock pipe insulation on the HWH supply
		HT-16	7 Units	Insulated cement fittings on the HWH supply
		HT-02	53 LF	Magblock pipe insulation on the HWH return
		HT-18	7 Units	Insulated cement fittings on the HWH return
1058	Parachute Storage	HF-23	542 SF	9" x 9" Olive Green with White Streak Floor Tile
		HF-22	813 SF	9" x 9" White with Black Streak Floor Tile
		HW-06	1050 SF	Transite wall panel
		HT-21	3 Units	Insulated cement fittings on the Drain line
		HT-02	110 LF	3" Magblock pipe insulation on the HWH supply
		HT-16	11 Units	Insulated cement fittings on the HWH supply
		HT-02	25 LF	8" Magblock pipe insulation on the HWH supply
		HT-16	2 Units	Insulated cement fittings on the HWH supply
		HT-02	110 LF	3" Magblock pipe insulation on the HWH return
		HT-18	10 Units	Insulated cement fittings on the HWH return
		HT-02	25 LF	8" Magblock pipe insulation on the HWH return
		HT-18	2 Units	Insulated cement fittings on the HWH return
		HT-06	9 LF	Aircell pipe insulation on the DHW
1059	Mechanical Room	HT-07	30 LF	Cardboard with Black Paper on the DCW
		HT-04	3 Units	Insulated cement fittings on the DCW
		HT-06	9 LF	Aircell pipe insulation on the DHW
		HT-02	6 LF	Magblock pipe insulation on the HPS
		HT-20	3 Units	Insulated cement fittings on the HPS
		HT-02	44 LF	Magblock pipe insulation on the LPS
		HT-20	6 Units	Insulated cement fittings on the LPS
		HT-10	38 SF	Pressure Release tank insulation
		HT-10	38 SF	Lower tank insulation
1060	Fan Room	HW-06	780 SF	Transite wall panel
		HW-06	168 SF	Transite ceiling panel
		HT-07	47 LF	Cardboard with Black Paper on the DCW
		HT-04	9 Units	Insulated cement fittings on the DCW
		HT-06	42 LF	Aircell pipe insulation on the DHW
		HT-17	4 Units	Insulated cement fittings on the DHW
		HT-02	8 LF	Magblock pipe insulation on the LPS
		HT-20	10 Units	Insulated cement fittings on the LPS
		HT-02	12 LF	Magblock pipe insulation on the HWH supply
		HT-02	12 LF	Magblock pipe insulation on the HWH return
		HT-13	1 Unit	Vibration gasket - HVAC
1061	Supply Room	HF-28	220 SF	Mastic beneath White with Grey Fleck FT
		HT-02	27 LF	Magblock pipe insulation on the HWH supply
		HT-16	1 Unit	Insulated cement fittings on the HWH supply
		HT-02	27 LF	Magblock pipe insulation on the HWH return
		HT-18	1 Unit	Insulated cement fittings on the HWH return

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
1062	Storage/ Locker Room	HF-23	25 SF	9" x 9" Olive Green with White Streak Floor Tile
		HF-22	80 SF	9" x 9" White with Black Streak Floor Tile
		HT-02	10 LF	Magblock pipe insulation on the HWH supply
		HT-02	10 LF	Magblock pipe insulation on the HWH return
		HT-18	4 Units	Insulated cement fittings on the HWH return
		HT-07	17 LF	Cardboard with Black Paper on the DCW
		HT-04	4 Units	Insulated cement fittings on the DCW
		HT-06	15 LF	Aircell pipe insulation on the DHW
		HT-17	1 Unit	Insulated cement fittings on the DHW
1063	Explosives Storage Room	HF-23	47 SF	9" x 9" Olive Green with White Streak Floor Tile
		HT-06	4.5 LF	Aircell pipe insulation on the DHW
1064	Parachute Storage Room	HF-23	90 SF	9" x 9" Olive Green with White Streak Floor Tile
		HF-22	135 SF	9" x 9" White with Black Streak Floor Tile
		HT-02	15 LF	Magblock pipe insulation on the HWH supply
		HT-16	3 Units	Insulated cement fittings on the HWH supply
		HT-02	30 LF	Magblock pipe insulation on the HWH return
		HT-18	4 Units	Insulated cement fittings on the HWH return
1065	ALSE Supervisor	HF-23	64 SF	9" x 9" Olive Green with White Streak Floor Tile
		HF-22	192 SF	9" x 9" White with Black Streak Floor Tile
		HW-06	240 SF	Transite wall panel – South Wall
		HT-02	63 LF	Magblock pipe insulation on the HWH supply
		HT-16	24 Units	Insulated cement fittings on the HWH supply
		HT-02	71 LF	Magblock pipe insulation on the HWH return
		HT-18	21 Units	Insulated cement fittings on the HWH return
		HT-06	31 LF	Aircell pipe insulation on the DHW
		HT-17	4 Units	Insulated cement fittings on the DHW
1066	Office	HF-23	64 SF	9" x 9" Olive Green with White Streak Floor Tile
		HF-22	192 SF	9" x 9" White with Black Streak Floor Tile
		HW-06	240 SF	Transite wall panel – South Wall
		HT-02	72 LF	Magblock pipe insulation on the HWH supply
		HT-16	13 Units	Insulated cement fittings on the HWH supply
		HT-02	72 LF	Magblock pipe insulation on the HWH return
		HT-18	18 Units	Insulated cement fittings on the HWH return
		HT-06	16 LF	Aircell pipe insulation on the DHW
1067	Office	HF-28	240 SF	Mastic - Beneath FT
		HW-06	105 SF	Transite wall panel
		HT-02	8 LF	Magblock pipe insulation on the HWH supply
		HT-02	8 LF	Magblock pipe insulation on the HWH return
1068	Telecomm Room	HF-28	100 SF	Mastic - Beneath FT
		HT-02	10 LF	Magblock pipe insulation on the HWH supply
		HT-02	10 LF	Magblock pipe insulation on the HWH return
1069	Sprinkler Room	HF-15	97 SF	Mastic - Beneath FT
		HT-02	15 LF	8" Magblock pipe insulation on the HPS
		HT-02	10 LF	8" Magblock pipe insulation on the LPS
		HT-07	15 LF	Cardboard with Black Paper on the DCW
		HT-19	1 Unit	Insulated cement fittings on the DCW
		HT-02	10 LF	Magblock pipe insulation on the HWH return
		HT-18	4 Units	Insulated cement fittings on the HWH return
		HT-02	25 LF	Magblock pipe insulation on the HWH supply
1070	Office - Metal Workshop	HF-15	336 SF	Mastic - Beneath FT
		HW-06	236 SF	Transite wall panel
		HT-02	28 LF	8" Magblock pipe insulation on the HWH supply
		HT-16	3 Units	Insulated cement fittings on the HWH supply
		HT-02	12 LF	Magblock pipe insulation on the HWH return
		HT-02	18 LF	Magblock pipe insulation on the HPS

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
		HT-20	4 Units	Insulated cement fittings on the HPS
		HT-02	16 LF	Magblock pipe insulation on the LPS
		HT-07	22 LF	Cardboard with Black Paper on the DCW
		HT-19	8 Units	Insulated cement fittings on the DCW
		HT-06	16 LF	Aircell pipe insulation on the DHW
1071	Tool Crib	HF-15	360 SF	Mastic - Beneath FT
		HW-06	105 SF	Transite wall panel
		HT-02	85 LF	3" Magblock pipe insulation on the HWH supply
		HT-02	30 LF	8" Magblock pipe insulation on the HWH supply
		HT-16	12 Units	Insulated cement fittings on the HWH supply
		HT-02	80 LF	3" Magblock pipe insulation on the HWH return
		HT-02	80 LF	8" Magblock pipe insulation on the HWH return
		HT-18	13 Units	Insulated cement fittings on the HWH return
		HT-02	30 LF	Magblock pipe insulation on the HPS
		HT-20	1 Unit	Insulated cement fittings on the HPS
		HT-02	45 LF	Magblock pipe insulation on the LPS
		HT-20	2 Units	Insulated cement fittings on the LPS
		HT-07	30 LF	Cardboard with Black Paper on the DCW
		HT-19	1 Unit	Insulated cement fittings on the DCW
		HT-06	30 LF	Aircell pipe insulation on the DHW
1072	Metal Workshop	HW-06	240 SF	Transite wall panel – South wall
		HT-02	100 LF	3" Magblock pipe insulation on the HWH supply
		HT-02	6 LF	8" Magblock pipe insulation on the HWH supply
		HT-16	25 Units	Insulated cement fittings on the HWH supply
		HT-02	130 LF	3" Magblock pipe insulation on the HWH return
		HT-02	6 LF	8" Magblock pipe insulation on the HWH return
		HT-18	18 Units	Insulated cement fittings on the HWH return
		HT-02	10 LF	10" Magblock pipe insulation on the HPS
		HT-20	1 Unit	Insulated cement fittings on the HPS
		HT-02	70 LF	Magblock pipe insulation on the LPS
		HT-20	5 Units	Insulated cement fittings on the LPS
		HT-07	15 LF	Cardboard with Black Paper on the DCW
		HT-19	9 Units	Insulated cement fittings on the DCW
		HT-06	50 LF	Aircell pipe insulation on the DHW
		HT-17	9 Units	Insulated cement fittings on the DHW
1073	Metal Shop	HT-02	24 LF	3" Magblock pipe insulation on the HWH supply
		HT-02	68 LF	8" Magblock pipe insulation on the HWH supply
		HT-16	12 Units	Insulated cement fittings on the HWH supply
		HT-02	27 LF	3" Magblock pipe insulation on the HWH return
		HT-02	68 LF	8" Magblock pipe insulation on the HWH return
		HT-18	10 Units	Insulated cement fittings on the HWH return
		HT-02	68 LF	10" Magblock pipe insulation on the HPS
		HT-20	6 Units	Insulated cement fittings on the HPS
		HT-02	21 LF	Magblock pipe insulation on the LPS
		HT-07	68 LF	Cardboard with Black Paper on the DCW
		HT-19	10 Units	Insulated cement fittings on the DCW
		HT-06	77 LF	Aircell pipe insulation on the DHW
		HT-17	5 Units	Insulated cement fittings on the DHW
1074	Lunch Room	HW-06	500 SF	Transite wall panel
		HT-02	89 LF	3" Magblock pipe insulation on the HWH supply
		HT-16	4 Units	Insulated cement fittings on the HWH supply
		HT-02	89 LF	3" Magblock pipe insulation on the HWH return
		HT-18	3 Units	Insulated cement fittings on the HWH return
		HT-02	16 LF	3" Magblock pipe insulation on the LPS
		HT-20	2 Units	Insulated cement fittings on the LPS

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
		HT-11	180 SF	Fibreglass with Cement Parging on the ventilation duct insulation
		-	5 units	Vibration gaskets – HVAC – suspect ACM
1075	Welding Shop	HW-06	54 SF	Transite wall panel – South wall
		HT-19	3 Units	Insulated cement fittings on the DCW
1076	Machine Shop	No asbestos-containing materials were analytically determined to be present.		
1077	Machine Shop/ Metal Workshop	HT-02	75 LF	10" Magblock pipe insulation on the HPS
		HT-20	2 Units	Insulated cement fittings on the HPS
		HT-07	75 LF	Cardboard with Black Paper on the DCW
		HT-19	2 Units	Insulated cement fittings on the DCW
		HT-06	75 LF	Aircell pipe insulation on the DHW
		HT-17	2 Units	Insulated cement fittings on the DHW
		HT-02	24 LF	3" Magblock pipe insulation on the LPS
		HT-20	1 Unit	Insulated cement fittings on the LPS
		HT-02	45 LF	3" Magblock pipe insulation on the HWH supply
		HT-02	75 LF	8" Magblock pipe insulation on the HWH supply
		HT-16	11 Units	Insulated cement fittings on the HWH supply
		HT-02	45 LF	3" Magblock pipe insulation on the HWH return
		HT-02	75 LF	8" Magblock pipe insulation on the HWH return
		HT-18	15 Units	Insulated cement fittings on the HWH return
		HT-13	1 Unit	Vibration gaskets – HVAC
1078	Mechanical Room	HT-02	4 LF	10" Magblock pipe insulation on the HPS
		HT-20	3 Units	Insulated cement fittings on the HPS
		HT-07	4 LF	Cardboard with Black Paper on the DCW
		HT-19	2 Units	Insulated cement fittings on the DCW
		HT-06	4 LF	Aircell pipe insulation on the DHW
		HT-02	55 LF	3" Magblock pipe insulation on the LPS
		HT-20	2 Units	Insulated cement fittings on the LPS
		HT-02	8 LF	3" Magblock pipe insulation on the HWH supply
		HT-02	4 LF	8" Magblock pipe insulation on the HWH supply
		HT-02	8 LF	3" Magblock pipe insulation on the HWH return
		HT-02	4 LF	8" Magblock pipe insulation on the HWH return
		HT-10	50 SF	Condensate tank insulation
		HT-10	50 SF	Pressure Release tank insulation
		HT-14	2 Units	Internal Paper Layer within Fire Door
1079	Fan Room	HW-06	630 SF	Transite wall panel
		HW-06	504 SF	Transite ceiling panel
		HT-02	12 LF	10" Magblock pipe insulation on the HPS
		HT-07	40 LF	Cardboard with Black Paper on the DCW
		HT-19	6 Units	Insulated cement fittings on the DCW
		HT-06	15 LF	Aircell pipe insulation on the DHW
		HT-02	5 LF	3" Magblock pipe insulation on the LPS
		HT-20	4 Units	Insulated cement fittings on the LPS
		HT-02	16 LF	8" Magblock pipe insulation on the HWH supply
		HT-02	10 LF	3" Magblock pipe insulation on the HWH supply
		HT-02	15 LF	8" Magblock pipe insulation on the HWH return
		HT-18	4 Units	Insulated cement fittings on the HWH return
		HT-14	1 Unit	Internal Paper Layer within Fire Door
		HT-13	1 Unit	Vibration gaskets – HVAC
1080	Haz Storage	No asbestos-containing materials were analytically determined to be present.		
1081	Stairwell	No asbestos-containing materials were analytically determined to be present.		
1082	Entrance Room	HW-06	70 SF	Transite wall panel
		HT-02	7 LF	Magblock pipe insulation on the LPS

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
1083A	Main Corridor (North Entrance to Bays 1 & 6)	HT-21	3 Units	Insulated cement fittings on the Drain
		HT-02	70 LF	Magblock pipe insulation on the HWH supply
		HT-16	6 Units	Insulated cement fittings on the HWH supply
		HT-02	50 LF	8" Magblock pipe insulation on the HWH return
		HT-18	4 Units	Insulated cement fittings on the HWH return
		HT-02	18 LF	Magblock pipe insulation on the LPS
		HT-07	15 LF	Cardboard with Black Paper on the DCW
1083B	Main Corridor (Bays 1 & 6 to Bays 2 & 5)	HT-21	4 Units	Insulated cement fittings on the Drain
		HT-02	18 LF	Magblock pipe insulation on the HPS
		HT-02	18 LF	Magblock pipe insulation on the LPS
1083C	Main Corridor (Bays 2 & 5 to Bays 3 & 4)	HT-21	4 Units	Insulated cement fittings on the Drain
		HT-02	14 LF	Magblock pipe insulation on the HWH supply
		HT-16	4 Units	Insulated cement fittings on the HWH supply
1083D	Main Corridor (Bays 3 & 4 to South Entrance)	HT-21	1 Unit	Insulated cement fittings on the Drain
		HT-06	16 LF	Aircell pipe insulation on the DHW
		HT-02	16 LF	Magblock pipe insulation on the HPS
		HT-02	48 LF	Magblock pipe insulation on the HWH supply
		HT-16	7 Units	Insulated cement fittings on the HWH supply
		HT-02	41 LF	Magblock pipe insulation on the HWH return
		HT-18	7 Units	Insulated cement fittings on the HWH return
		HT-02	27 LF	Magblock pipe insulation on the LPS
		HT-20	3 Units	Insulated cement fittings on the LPS
		HT-07	16 LF	Cardboard with Black Paper on the DCW
		HT-19	1 Unit	Insulated cement fittings on the DCW
1084	Electrical Room	HT-14	1 Unit	Internal Paper Layer within Fire Door
1085	Mechanical Room	HT-02	12 LF	Magblock pipe insulation on the HPS
		HT-20	4 Units	Insulated cement fittings on the HPS
		HT-07	12 LF	Cardboard with Black Paper on the DCW
		HT-19	1 Unit	Insulated cement fittings on the DCW
		HT-02	28 LF	Magblock pipe insulation on the LPS
		HT-02	-	Magblock residual on the LPS
		HT-20	5 Units	Insulated cement fittings on the LPS
		HT-02	6 LF	8" Magblock pipe insulation on the HWH supply
		HT-02	6 LF	8" Magblock pipe insulation on the HWH return
		HT-10	38 SF	Lower tank insulation
		HT-10	38 SF	Pressure Release tank insulation
		-	1 Unit	Suspect ACM fire door
1086	Fan Room	HW-06	930 SF	Transite wall panel
		HW-06	240 SF	Transite ceiling panel
		HT-02	15 LF	10" Magblock pipe insulation on the HPS
		HT-07	56 LF	Cardboard with Black Paper on the DCW
		HT-19	4 Units	Insulated cement fittings on the DCW
		HT-06	30 LF	Aircell pipe insulation on the DHW
		HT-17	2 Units	Insulated cement fittings on the DHW
		HT-02	15 LF	8" Magblock pipe insulation on the HWH supply
		HT-02	10 LF	3" Magblock pipe insulation on the HWH supply
		HT-16	4 Units	Insulated cement fittings on the HWH supply
		HT-02	15 LF	8" Magblock pipe insulation on the HWH return
		HT-02	10 LF	3" Magblock pipe insulation on the HWH return
		HT-18	2 Units	Insulated cement fittings on the HWH return

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
		HT-11	355 SF	Canvas Wrap with Black Paper and Parging over Fibreglass on the Ventilation duct insulation
		HT-13	1 Unit	Vibration Gasket on the HVAC fan duct
1087	Supply & Aircraft Support Flight	HF-03	196 SF	12" x 12" Salmon with White Streak Floor Tile
		HW-06	420 SF	Transite wall panel
		HT-02	65 LF	Magblock pipe insulation on the HPS
		HT-07	126 LF	Cardboard with Black Paper on the DCW
		HT-19	8 Units	Insulated cement fittings on the DCW
		HT-06	66 LF	Aircell pipe insulation on the DHW
		HT-02	56 LF	8" Magblock pipe insulation on the HWH supply
		HT-02	56 LF	3" Magblock pipe insulation on the HWH supply
		HT-16	24 Units	Insulated cement fittings on the HWH supply
		HT-02	56 LF	8" Magblock pipe insulation on the HWH return
		HT-02	56 LF	3" Magblock pipe insulation on the HWH return
		HT-18	14 Units	Insulated cement fittings on the HWH return
		HT-21	6 Units	Insulated cement fittings on the Drain
		HT-15	<2 LF	Parging on the Air Line (end pieces)
1088	Office	HW-06	280 SF	Transite wall panel
		HT-07	20 LF	Cardboard with Black Paper on the DCW
		HT-19	6 Units	Insulated cement fittings on the DCW
		HT-06	38 LF	Aircell pipe insulation on the DHW
		HT-21	10 Units	Insulated cement fittings on the DHW
		HT-14	1 Unit	Internal Paper Layer within Fire Door
1089	Office	HW-06	504 SF	Transite wall panel
		HW-06	-	Transite debris above ceiling tile
		HT-02	12 LF	Magblock pipe insulation on the HWH return
		HT-18	3 Units	Insulated cement fittings on the HWH return
		HT-06	1 LF	Aircell pipe insulation on the DHW
		HT-21	1 Unit	Insulated cement fittings on the DHW
1090	Office - Technical Flight Supervisor	HF-03	100 SF	12" x 12" Salmon with White Streak Floor Tile
		HW-06	16 SF	Transite wall panel – East wall
		HT-02	11 LF	3" Magblock pipe insulation on the HWH return
		HT-18	3 Units	Insulated cement fittings on the HWH return
		HT-02	10 LF	3" Magblock pipe insulation on the HWH supply
1091	Office	HT-02	8 LF	3" Magblock pipe insulation on the HWH supply
		HT-16	1 Unit	Insulated cement fittings on the HWH supply
1092	Office	No asbestos-containing materials were analytically determined to be present.		
1093	Office	No asbestos-containing materials were analytically determined to be present.		
1094	Lunch Room	HT-02	60 LF	Magblock pipe insulation on the HPS
		HT-20	2 Units	Insulated cement fittings on the HPS
		HT-02	60 LF	Magblock pipe insulation on the LPS
		HT-20	2 Units	Insulated cement fittings on the LPS
		HT-02	112 LF	Magblock pipe insulation on the HWH supply
		HT-16	14 Units	Insulated cement fittings on the HWH supply
		HT-02	112 LF	Magblock pipe insulation on the HWH return
		HT-18	9 Units	Insulated cement fittings on the HWH return
		HT-06	64 LF	Aircell pipe insulation on the DHW
		HT-21	15 Units	Insulated cement fittings on the DHW
		HT-07	64 LF	Cardboard with Black Paper on the DCW
		HT-19	6 Units	Insulated cement fittings on the DCW
		HT-13	1 Unit	Vibration gasket on the HVAC unit
1095	Mechanical Room	HT-02	6 LF	10" Magblock pipe insulation on the HPS
		HT-02	6 LF	10" Magblock pipe insulation on the LPS

<i>FUNCTIONAL SPACE ID #</i>	<i>ROOM NAME/NUMBER</i>	<i>HOMOGENEOUS MATERIAL No.</i>	<i>QUANTITY</i>	<i>ASBESTOS CONTAINING MATERIALS DESCRIPTION</i>
		HT-02	42 LF	3" Magblock pipe insulation on the LPS
		HT-02	6 LF	Magblock pipe insulation on the HWH supply
		HT-02	6 LF	Magblock pipe insulation on the HWH return
		HT-07	15 LF	Cardboard with Black Paper on the DCW
		HT-19	3 Units	Insulated cement fittings on the DCW
		HT-04	-	Insulated cement debris
		HT-10	38 SF	Lower tank insulation
		HT-10	38 SF	Pressure Release tank insulation
1096	Fan Room	HW-06	840 SF	Transite wall panel
		HW-06	240 SF	Transite ceiling panel
		HT-02	8 LF	10" Magblock pipe insulation on the HPS
		HT-02	5 LF	3" Magblock pipe insulation on the LPS
		HT-20	2 units	Insulated cement fittings on the LPS
		HT-02	5 LF	8" Magblock pipe insulation on the HWH supply
		HT-16	3 Units	Insulated cement fittings on the HWH supply
		HT-02	15 LF	3" Magblock pipe insulation on the HWH supply
		HT-02	20 LF	8" Magblock pipe insulation on the HWH return
		HT-02	18 LF	3" Magblock pipe insulation on the HWH return
		HT-18	3 Units	Insulated cement fittings on the HWH return
		HT-07	50 LF	Cardboard with Black Paper on the DCW
		HT-19	10 Units	Insulated cement fittings on the DCW
		HT-06	50 LF	Aircell pipe insulation on the DHW
		HT-21	11 Units	Insulated cement fittings on the DHW
		HT-11	110 SF	Fibreglass with Parging Cement on the duct insulation
		HT-13	1 Unit	Vibration gasket on the HVAC unit
1097	Lab Testing	HF-32	220 SF	Black Mastic Below Floor Tile
		HF-33	12 SF	Black Mastic Below Floor Tile
		HF-23	172 SF	9" x 9" Olive Green with White Streak Floor Tile
		HF-22	400 SF	9" x 9" White with Black Streak Floor Tile
		HF-26	2 SF	Black Mastic Below Floor Tile
		HF-27	6 SF	9" x 9" Rose with Brown Fleck Floor Tile
		HT-02	85 LF	3" Magblock pipe insulation on the HWH supply
		HT-16	6 Units	Insulated cement fittings on the HWH supply
		HT-02	32 LF	8" Magblock pipe insulation on the HWH return
		HT-02	85 LF	3" Magblock pipe insulation on the HWH return
		HT-18	6 Units	Insulated cement fittings on the HWH return
		HT-07	5 LF	Cardboard with Black Paper on the DCW
		HT-19	1 Unit	Insulated cement fittings on the DCW
		HT-06	32 LF	Aircell pipe insulation on the DHW
1098	Mechanical Power Room	HT-07	85 LF	Cardboard with Black Paper on the DCW
		HT-19	10 Units	Insulated cement fittings on the DCW
		HT-21	2 Units	Insulated cement fittings on the Drain
		-	-	Cloth wiring – suspect ACM
		HT-14	1 Unit	Internal Paper Layer within Fire Door
1099	Tool Crib	HF-19	1368 SF	Black Mastic Below Floor Tile
		HW-06	568 SF	Transite wall panel
		HT-02	70 LF	Magblock pipe insulation on the HWH supply
		HT-16	3 Units	Insulated cement fittings on the HWH supply
		HT-02	102 LF	Magblock pipe insulation on the HWH return
		HT-18	6 Units	Insulated cement fittings on the HWH return
1100	Office	HF-19	160 SF	Black Mastic Below Floor Tile
		HW-06	672 SF	Transite wall panel
1101	Office	HW-06	704 SF	Transite wall panel
		HT-21	2 Units	Insulated cement fittings on the Drain

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
1102	Office	HW-06 -	432 SF -	Transite wall panel Cloth wiring – suspect ACM
1103	Common Area - Corridor	HW-06 HT-20 HT-06 HT-21 HT-07 HT-19 HT-02	320 SF 3 units 16 LF 3 Units 16 LF 4 Units 11 LF	Transite wall panel Insulated cement fittings on the LPS Aircell pipe insulation on the DHW Insulated cement fittings on the DHW Cardboard with Black Paper on the DCW Insulated cement fittings on the DCW Magblock pipe insulation on the HWH return
1104	Office	HW-06 HT-02 HT-18 HT-06 HT-21	208 SF 19 LF 3 Units 22 LF 3 Units	Transite wall panel Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return Aircell pipe insulation on the DHW Insulated cement fittings on the DHW
1105	Conference Room	HT-02 HT-02 HT-07 HT-19 HT-02 HT-02 HT-16 HT-02 HT-02 HT-18 HT-06	27 LF 3 LF 40 LF 8 Units 41 LF 27 LF 8 Units 58 LF 10 LF 6 Units 37 LF	8" Magblock pipe insulation on the HPS 3" Magblock pipe insulation on the HPS Cardboard with Black Paper on the DCW Insulated cement fittings on the DCW 8" Magblock pipe insulation on the HWH supply 3" Magblock pipe insulation on the HWH supply Insulated cement fittings on the HWH supply 3" Magblock pipe insulation on the HWH return 6" Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return Aircell pipe insulation on the DHW
1106	Corridor	HT-02 HT-07 HT-02 HT-02 HT-06 HT-14	5 LF 5 LF 5 LF 5 LF 5 LF 1 Unit	Magblock pipe insulation on the HPS Cardboard with Black Paper on the DCW 6" Magblock pipe insulation on the HWH return 6" Magblock pipe insulation on the HWH supply Aircell pipe insulation on the DHW Internal Paper Layer within Fire Door
1107	Conference Room	HT-02 HT-07 HT-06 HT-02 HT-02 HT-18 HT-02 HT-02 HT-18	17 LF 17 LF 17 LF 17 LF 24 LF 5 Units 17 LF 25 LF 6 Units	10" Magblock pipe insulation on the HPS Cardboard with Black Paper on the DCW 6" Aircell pipe insulation on the DHW 8" Magblock pipe insulation on the HWH return 3" Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return 8" Magblock pipe insulation on the HWH supply 3" Magblock pipe insulation on the HWH supply Insulated cement fittings on the HWH supply
1108	Office Room	HF-23 HF-22	242 SF 776 SF	9" x 9" Olive Green with White Streak Floor Tile 9" x 9" White with Black Streak Floor Tile
1108A	Mezzanine Level above 1108	No asbestos-containing materials were analytically determined to be present.		
1109	Corridor / Office Space	HF-23 HF-22	94 SF 241 SF	9" x 9" Olive Green with White Streak Floor Tile 9" x 9" White with Black Streak Floor Tile
1110	Storage Room	HF-23 HF-22	8 SF 22 SF	9" x 9" Olive Green with White Streak Floor Tile 9" x 9" White with Black Streak Floor Tile
1111	Office	HF-23 HF-22	60 SF 20 SF	9" x 9" Olive Green with White Streak Floor Tile 9" x 9" White with Black Streak Floor Tile
1112	Office	HF-03 HF-23 HF-22	9 SF 48 SF 203 SF	12" x 12" Salmon with White Streak Floor Tile 9" x 9" Olive Green with White Streak Floor Tile 9" x 9" White with Black Streak Floor Tile
1113	Coffee & Storage Room	HF-23 HF-22	17 SF 55 SF	9" x 9" Olive Green with White Streak Floor Tile 9" x 9" White with Black Streak Floor Tile

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
1114	Mezzanine Level above 1108	No asbestos-containing materials were analytically determined to be present.		
1115	Stairwell / Landing	No asbestos-containing materials were analytically determined to be present.		
1116	Office 42 B	HT-02	9 LF	8" Magblock pipe insulation on the HWH supply
		HT-02	9 LF	8" Magblock pipe insulation on the HWH return
		HT-02	9 LF	8" Magblock pipe insulation on the HPS
		HT-06	9 LF	8" Aircell pipe insulation on the DHW
		HT-07	9 LF	Cardboard with Black Paper on the DCW
1117	Office	HT-02	10 LF	3" Magblock pipe insulation on the HWH supply
		HT-02	38 LF	8" Magblock pipe insulation on the HWH supply
		HT-16	4 Units	Insulated cement fittings on the HWH supply
		HT-02	10 LF	3" Magblock pipe insulation on the HWH return
		HT-02	38 LF	8" Magblock pipe insulation on the HWH return
		HT-18	4 Units	Insulated cement fittings on the HWH return
		HT-02	50 LF	10" Magblock pipe insulation on the HPS
		HT-20	1 Unit	Insulated cement fittings on the HPS
		HT-06	38 LF	8" Aircell pipe insulation on the DHW
		HT-17	1 Unit	Insulated cement fittings on the DHW
		HT-07	38 LF	Cardboard with Black Paper on the DCW
		HT-19	1 Unit	Insulated cement fittings on the DCW
1118	Test Room	HF-24	280 SF	12" x 12" Chocolate Brown with White Streaks Floor Tile
		HT-02	10 LF	3" Magblock pipe insulation on the HWH supply
		HT-02	38 LF	8" Magblock pipe insulation on the HWH supply
		HT-16	4 Units	Insulated cement fittings on the HWH supply
		HT-02	30 LF	3" Magblock pipe insulation on the HWH return
		HT-02	20 LF	6" Magblock pipe insulation on the HWH return
		HT-18	4 Units	Insulated cement fittings on the HWH return
		HT-02	20 LF	10" Magblock pipe insulation on the HPS
		HT-20	1 Unit	Insulated cement fittings on the HPS
		HT-06	20 LF	8" Aircell pipe insulation on the DHW
		HT-17	1 Unit	Insulated cement fittings on the DHW
		HT-07	20 LF	Cardboard with Black Paper on the DCW
		HT-19	1 Unit	Insulated cement fittings on the DCW
		HT-21	3 Units	Insulated cement fittings on the Drain
1119	Electrical Room	HT-14	1 Unit	Internal Paper Layer within Fire Door
1120	Men's Washroom	HC-18	80 SF	2' x 2' Transite Dot Ceiling Tile
		HT-02	22 LF	Magblock pipe insulation on the HWH supply
		HT-16	1 Unit	Insulated cement fittings on the HWH supply
		HT-02	22 LF	3" Magblock pipe insulation on the HWH return
		HT-18	2 Units	Insulated cement fittings on the HWH return
		HT-07	10 LF	Cardboard with Black Paper on the DCW
		HT-19	2 Units	Insulated cement fittings on the DCW
		HT-06	10 LF	Aircell pipe insulation on the DHW
		HT-17	2 Units	Insulated cement fittings on the DHW
		HT-04	-	Insulated cement debris on top of ceiling tiles
		HT-14	1 Unit	Internal Paper Layer within Fire Door
1121	Barber Shop	HW-05	288 SF	Texture Coat Plaster
		HC-18	80 SF	2' x 2' Transite Dot Ceiling Tile
		HT-02	10 LF	3" Magblock pipe insulation on the HWH supply
		HT-16	2 Units (Possible Above CT)	Insulated cement fittings on the HWH supply
		HT-02	10 LF	3" Magblock pipe insulation on the HWH return
		HT-18	2 Units (Possible)	Insulated cement fittings on the HWH return

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
		HT-06 HT-17	Above CT) 8 LF 2 Units (Possible Above CT)	Aircell pipe insulation on the DHW Insulated cement fittings on the DHW
		HT-07 HT-19	10 LF 2 Units (Possible Above CT)	Cardboard with Black Paper on the DCW Insulated cement fittings on the DCW
		HT-14	1 Unit	Internal Paper Layer within Fire Door
1122	Entrance to Men's Washroom	HT-02 HT-02 HT-06 HT-17 HT-07 HT-19 HT-21 HT-14	10 LF 10 LF 6 LF 2 Units 14 LF 2 Units 1 Unit 1 Unit	6" Magblock pipe insulation on the HWH supply 6" Magblock pipe insulation on the HWH return Aircell pipe insulation on the DHW Insulated cement fittings on the DHW Cardboard with Black Paper on the DCW Insulated cement fittings on the DCW Insulated cement fittings on the Drain Internal Paper Layer within Fire Door
1122	Custodian Storage	No asbestos-containing materials were analytically determined to be present.		
1123	Men's Washroom	HT-02 HT-16 HT-02 HT-18 HT-06 HT-07	50 LF 3 Units 16 LF 1 Unit 14 LF 14 LF	3" Magblock pipe insulation on the HWH supply Insulated cement fittings on the HWH supply 3" Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return Aircell pipe insulation on the DHW Cardboard with Black Paper on the DCW
1124	Mechanical Room Entrance	HT-02 HT-02 HT-06 HT-07 HT-19 HT-02 HT-02 HT-10 HT-10	8 LF 8 LF 5 LF 19 LF 4 Units 8 LF 5 LF 38 SF 38 SF	Magblock pipe insulation on the HWH supply Magblock pipe insulation on the HWH return Aircell pipe insulation on the DHW Cardboard with Black Paper on the DCW Insulated cement fittings on the DCW Magblock pipe insulation on the HPS Magblock pipe insulation on the LPS Condensate tank insulation Pressure Release tank insulation
1125	Fan Room	HW-06 HW-06 HT-02 HT-02 HT-16 HT-02 HT-02 HT-18 HT-06 HT-06 HT-07 HT-19 HT-11 HT-13	840 SF 192 SF 24 LF 16 LF 4 Units 24 LF 16 LF 2 Units 16 LF 18 LF 16 LF 3 Units 528 SF 1 Unit	Transite wall panel Transite ceiling panel 3" Magblock pipe insulation on the HWH supply 8" Magblock pipe insulation on the HWH supply Insulated cement fittings on the HWH supply 3" Magblock pipe insulation on the HWH return 8" Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return 4" Aircell pipe insulation on the DHW 3" Aircell pipe insulation on the DHW 4" Cardboard with Black Paper on the DCW Insulated cement fittings on the DCW Canvas with Black Paper & Parging over Fibreglass on the HVAC duct insulation Vibration Gasket HVAC unit
1126	Women's Washroom	HC-18	80 SF	2' x 2' Transite Dot Ceiling Tile
1127	Women's Change Room	HF-23 HF-22 HC-18	50 SF 50 SF 100 SF	9" x 9" Olive Green with White Streak Floor Tile 9" x 9" White with Black Streak Floor Tile 2' x 2' Transite Dot Ceiling Tile

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
1128	Large Office Area	HF-27 HF-23 HF-22 HF-26 HF-24 HF-03 HW-06 HC-18 HT-02 HT-16 HT-02 HT-18 HT-21	64 SF 789 SF 2367 SF 19 SF 19 SF 6 SF 420 SF 2744 SF 98 LF 10 Units 98 LF 10 Units 2 Units	9" x 9" Rose with Brown Fleck Floor Tile 9" x 9" Olive Green with White Streak Floor Tile 9" x 9" White with Black Streak Floor Tile Black Mastic Below Floor Tile 12" x 12" Chocolate Brown with White Streaks Floor Tile 12" x 12" Salmon with White Streak Floor Tile Transite wall panel 2' x 2' Transite Dot Ceiling Tile Magblock pipe insulation on the HWH supply Insulated cement fittings on the HWH supply Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return Insulated cement fittings on the Drain
1129	D / AMCRO	HF-23 HF-22	60 SF 156 SF	9" x 9" Olive Green with White Streak Floor Tile 9" x 9" White with Black Streak Floor Tile
1130	Squadron CWO	HF-23 HF-22 HF-33	60 SF 156 SF 10SF	9" x 9" Olive Green with White Streak Floor Tile 9" x 9" White with Black Streak Floor Tile Black Mastic Below Floor Tile
1131	AMCRO Corridor	HF-23 HF-22 HC-18 HT-02 HT-02 HT-02 HT-06 HT-07 HT-14	54 SF 54 SF 108 SF 5.5 LF 5.5 LF 5.5 LF 5.5 LF 5.5 LF 1 Unit	9" x 9" Olive Green with White Streak Floor Tile 9" x 9" White with Black Streak Floor Tile 2' x 2' Transite Dot Ceiling Tile Magblock pipe insulation on the HWH return Magblock pipe insulation on the HWH supply Magblock pipe insulation on the LPS Aircell pipe insulation on the DHW Cardboard with Black Paper on the DCW Internal Paper Layer within Fire Door
1132	CO Office	HF-26 HW-06 HC-18 HT-02 HT-02 HT-16 HT-02 HT-02 HT-18 HT-02 HT-20 HT-06 HT-17 HT-07 HT-19	252 SF 180 SF 252 SF 20 LF 28 LF 8 Units 20 LF 28 LF 8 Units 28 LF 1 Unit 28 LF 1 Unit 28 LF 1 Unit	Black Mastic Below Floor Tile (suspect beneath rubber flooring) Transite wall panel 2' x 2' Transite Dot Ceiling Tile 3" Magblock pipe insulation on the HWH supply 8" Magblock pipe insulation on the HWH supply Insulated cement fittings on the HWH supply 3" Magblock pipe insulation on the HWH return 8" Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return Magblock pipe insulation on the LPS Insulated cement fittings on the LPS Aircell pipe insulation on the DHW Insulated cement fittings on the DHW Cardboard with Black Paper on the DCW Insulated cement fittings on the DCW
1133	CO Secretary's Office	HF-26 HW-06 HC-18 HT-02 HT-02 HT-16 HT-02 HT-02 HT-18	120 SF 396 SF 120 SF 20 LF 10 LF 7 Units 10 LF 10 LF 7 Units	Black Mastic Below Floor Tile (suspect beneath rubber flooring) Transite wall panel 2' x 2' Transite Dot Ceiling Tile 3" Magblock pipe insulation on the HWH supply 8" Magblock pipe insulation on the HWH supply Insulated cement fittings on the HWH supply 3" Magblock pipe insulation on the HWH return 8" Magblock pipe insulation on the HWH return Insulated cement fittings on the HWH return

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
		HT-02	10 LF	Magblock pipe insulation on the LPS
		HT-06	10 LF	Aircell pipe insulation on the DHW
		HT-07	10 LF	Cardboard with Black Paper on the DCW
1134	DCO Office	HF-26	175 SF	Black Mastic Below Floor Tile (suspect beneath rubber flooring)
		HW-06	405 SF	Transite wall panel
		HC-18	175 SF	2' x 2' Transite Dot Ceiling Tile
1135	DCO ADJ	HF-26	140 SF	Black Mastic Below Floor Tile (suspect beneath rubber flooring)
		HW-06	432 SF	Transite wall panel
		HC-18	140 SF	2' x 2' Transite Dot Ceiling Tile
		HT-02	10 LF	Magblock pipe insulation on the HWH supply
		HT-02	20 LF	3" Magblock pipe insulation on the HWH return
		HT-02	10 LF	8" Magblock pipe insulation on the HWH return
		HT-18	8 Units	Insulated cement fittings on the HWH return
		HT-02	10 LF	Magblock pipe insulation on the LPS
		HT-06	10 LF	Aircell pipe insulation on the DHW
		HT-07	10 LF	Cardboard with Black Paper on the DCW
1136	AMCRO Office	HF-26	133 SF	Black Mastic Below Floor Tile (suspect beneath rubber flooring)
		HW-06	235 SF	Transite wall panel
		HC-18	133 SF	2' x 2' Transite Dot Ceiling Tile
		HT-02	9 LF	Magblock pipe insulation on the HWH supply
1137	Battery Shop E	HW-06	192 SF	Transite wall panel
		HC-18	176 SF	2' x 2' Transite Dot Ceiling Tile
		HT-02	20 LF	Magblock pipe insulation on the HWH supply
		HT-02	20 LF	Magblock pipe insulation on the HWH return
		HT-04	2 Units	Insulated cement fittings on an unknown system
1138	Battery Shop W	HW-06	40 SF	Transite wall panel
		HC-18	240 SF	2' x 2' Transite Dot Ceiling Tile
		HT-02	15 LF	3" Magblock pipe insulation on the HWH return
		HT-02	10 LF	8" Magblock pipe insulation on the HWH return
		HT-18	1 Unit	Insulated cement fittings on the HWH return
		HT-02	15 LF	3" Magblock pipe insulation on the HWH supply
		HT-16	1 Unit	Insulated cement fittings on the HWH supply
		HT-16	-	Insulated cement debris on top of ceiling tiles
		HT-02	20 LF	Magblock pipe insulation on the LPS
		HT-07	45 LF	3" Cardboard with Black Paper on the DCW
		HT-07	10 LF	8" Cardboard with Black Paper on the DCW
		HT-19	9 Units	Insulated cement fittings on the DCW
		HT-06	35 LF	Aircell pipe insulation on the DHW
		HT-17	4 Units	Insulated cement fittings on the DHW
1139	Battery Shop Office	HT-02	28 LF	3" Magblock pipe insulation on the HWH supply
		HT-16	7 Units	Insulated cement fittings on the HWH supply
		HT-02	33 LF	3" Magblock pipe insulation on the HWH return
		HT-18	6 Units	Insulated cement fittings on the HWH return
Second Floor				
2001	Flight Planning/ Training Room	HF-34	486 SF	Black Mastic Suspect Beneath Rubber Flooring
		HW-03A	162 SF	Drywall and Joint Compound
		HW-06	162 SF	Transite Panel Board
		HC-18	486 SF	2'x2' Transite Dot Ceiling Tile
2002	Standard Cell Office/ Training Room	HF-34	288 SF	Black Mastic Suspect Beneath Rubber Flooring
		HW-03A	162 SF	Drywall and Joint Compound

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
		HW-06	162 SF	Transite Panel Board
		HC-18	288 SF	2'x2' Transite Dot Ceiling Tile
2003	Mechanical Room	HW-06	342 SF	Transite Panel Board
		HT-11	312 SF	Fibreglass with Parging on HVAC Unit
		HT-21	2 Units	Insulated Cement Fittings on the Drain Line
		HT-02	3 LF	Magblock Valve Insulation
		HT-04	1 Unit	Insulated Cement Fitting on the Valve
		HT-13	5 Units	Vibration Gasket from HVAC Unit
2004	Cashier's Office	HF-34	96 SF	Black Mastic Suspect Beneath Rubber Flooring
		HW-03A	135 SF	Drywall and Joint Compound
		HW-06	72 SF	Transite Panel Board
		HC-18	96 SF	2'x 2' Transite Dot Ceiling Tile
2004A	Cashier's Office	HF-34	84 SF	Black Mastic Suspect Beneath Rubber Flooring
		HW-03A	152 SF	Drywall and Joint Compound
		HW-06	56 SF	Transite Panel Board
		HC-18	84 SF	2'x 2' Transite Dot Ceiling Tile
2005A	Vestibule to Lunch Room	HF-34	20 SF	Black Mastic Suspect Beneath Rubber Flooring
		HW-03A	144 SF	Drywall and Joint Compound
2005	Lunch Room	HF-34	536 SF	Black Mastic Suspect Beneath Rubber Flooring
		HW-03A	540 SF	Drywall and Joint Compound
		HC-18	536 SF	2'x 2' Transite Dot Ceiling Tile
2006	Computer Lab	HF-34	360 SF	Black Mastic Suspect Beneath Rubber Flooring
		HW-03A	320 SF	Drywall and Joint Compound
		HC-18	360 SF	2'x 2' Transite Dot Ceiling Tile
2006A	Hallway to Computer Lab (2006) from Corridor	HF-34	40 SF	Black Mastic Suspect Beneath Rubber Flooring
		HW-03A	160 SF	Drywall and Joint Compound
		HW-06	36 SF	Transite Panel Board
		HC-18	40 SF	2'x 2' Transite Dot Ceiling Tile
2007	Office – Deputy Cabin Crew Leader	HF-34	120 SF	Black Mastic Suspect Beneath Rubber Flooring
		HW-03A	352 SF	Drywall and Joint Compound
		HW-06	Unknown	Transite Panel Board
2007A	Office – Cabin Crew Leader	HF-34	120 SF	Black Mastic Suspect Beneath Rubber Flooring
		HW-03A	352 SF	Drywall and Joint Compound
		HW-06	Unknown	Transite Panel Board
2008	Office	HF-34	80 SF	Black Mastic Suspect Beneath Rubber Flooring
		HW-03A	234 SF	Drywall and Joint Compound
		HC-18	80 SF	2'x 2' Transite Dot Ceiling Tile
2009	Office – Flight Stewart Leader	HF-34	80 SF	Black Mastic Suspect Beneath Rubber Flooring
		HW-03A	234 SF	Drywall and Joint Compound
		HC-18	80 SF	2'x 2' Transite Dot Ceiling Tile
2010	Office – Load Master Leader	HF-34	96 SF	Black Mastic Suspect Beneath Rubber Flooring
		HW-03A	189 SF	Drywall and Joint Compound
		HW-06	96 SF	Transite Panel Board
		HC-18	96 SF	2'x 2' Transite Dot Ceiling Tile
2011	Mechanical Area	HW-06	160 SF	Transite Panel Board
2012	Briefing Room	HF-34	896 SF	Black Mastic Suspected Below Carpet
		HW-03A	832 SF	Drywall and Joint Compound
2013	Back Office	HF-34	209 SF	Black Mastic Suspected Below Carpet
		HW-03A	240 SF	Drywall and Joint Compound
2014	Squadron Offices	HF-34	420 SF	Black Mastic Suspected Below Carpet
		HW-03A	568 SF	Drywall and Joint Compound

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
2015	Commander Secretary Office	HF-36 HW-03A	154 SF 400 SF	Black/Yellow Mastic Suspected Below Carpet Drywall and Joint Compound
2016	Commander Officer Office	HF-36 HW-03A HW-06	280 SF 480 SF 140 SF	Black/Yellow Mastic present Below Carpet Drywall and Joint Compound Transite Panel Board
2017	Deputy Commanding Officers Office	HF-36 HW-03A HW-06	280 SF 504 SF 160 SF	Black/Yellow Mastic Suspected Below Carpet Drywall and Joint Compound Transite Panel Board
2018	Storage Room	HF-36 HW-03A	45 SF 208 SF	Black/Yellow Mastic Suspected Below Carpet Drywall and Joint Compound
2019	Telecomm Room	HF-36	45 SF	Black/Yellow Mastic Suspected Below Carpet
2020	Office	HF-36 HW-03A HW-06	280 SF 456 SF 120 SF	Black/Yellow Mastic Suspected Below Carpet Drywall and Joint Compound Transite Panel Board
2021	"T" Squadron Corridor	HF-34	196 SF	Black Mastic Suspect Beneath Rubber Flooring
2022	Orderly Room	HF-34 HW-06 HC-18	364 SF 594 SF 364 SF	Black Mastic Suspect Beneath Rubber Flooring Transite Panel Board 2'x 2' Transite Dot Ceiling Tile
2023	Room	HF-34 HW-06 HC-18	140 SF 192 SF 140 SF	Black Mastic Suspect Beneath Rubber Flooring Transite Panel Board 2'x 2' Transite Dot Ceiling Tile
2024	Room	HF-22 HF-23 HW-06 HC-18	70 SF 30 SF 240 SF 100 SF	9" x 9" White with Black Streak Floor Tile 9" x 9" Olive Green with White Streak Floor Tile Transite Panel Board 2'x 2' Transite Dot Ceiling Tile
2025	"T" Squadron Admin Officer Office	HF-34 HW-06 HC-18	100 SF 240 SF 100 SF	Black Mastic Suspect Beneath Rubber Flooring Transite Panel Board 2'x 2' Transite Dot Ceiling Tile
2026	8 Wing Utility Flight - Multi Engine	HF-34 HW-06 HC-18	112 SF 288 SF 112 SF	Black Mastic Suspect Beneath Rubber Flooring Transite Panel Board 2'x 2' Transite Dot Ceiling Tile
2027	8 Wing Utility Flight - Flight Commander	HF-22 HF-23 HW-06 HC-18	42 SF 126 SF 416 SF 168 SF	9" x 9" White with Black Streak Floor Tile 9" x 9" Olive Green with White Streak Floor Tile Transite Panel Board 2'x 2' Transite Dot Ceiling Tile
2028	Office	HF-22 HF-23 HW-06 HC-18	28 SF 84 SF 352 SF 112 SF	9" x 9" White with Black Streak Floor Tile 9" x 9" Olive Green with White Streak Floor Tile Transite Panel Board 2'x 2' Transite Dot Ceiling Tile
2029A	Storage Area	HF-34 HW-03A HC-18	40 SF 112 SF 40 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound 2'x 2' Transite Dot Ceiling Tile
2029	Main Office	HF-34 HW-03A HW-06 HC-18	440 SF 176 SF 160 SF 440 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound Transite Panel Board 2'x 2' Transite Dot Ceiling Tile
2030	Office	HF-34 HW-03A HW-06 HC-18	144 SF 192 SF 144 SF 144 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound Transite Panel Board 2'x 2' Transite Dot Ceiling Tile

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
2031	Office Room	HF-34 HW-03A HW-06 HC-18	240 SF 352 SF 160 SF 240 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound Transite Panel Board 2'x 2' Transite Dot Ceiling Tile
2032	Office Room	HF-34 HW-03A HW-06 HC-18	144 SF 288 SF 96 SF 144 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound Transite Panel Board 2'x 2' Transite Dot Ceiling Tile
2033	Briefing Room	HF-22 HF-23 HW-06 HC-18	736 SF 736 SF 256 SF 1472 SF	9" x 9" White with Black Streak Floor Tile 9" x 9" Olive Green with White Streak Floor Tile Transite Panel Board 2'x 2' Transite Dot Ceiling Tile
2033A	Telecomm. Room	HF-22 HF-23 HW-03A HC-18	30 SF 10 SF 288 SF 40 SF	9" x 9" White with Black Streak Floor Tile 9" x 9" Olive Green with White Streak Floor Tile Transite Panel Board 2'x 2' Transite Dot Ceiling Tile
2034	Functional Space Not In Use			
2035	Men's Washroom	HT-21	2 Units	Insulated Cement Fittings from the Drain Line
2036	Women's Washroom and Locker Room	No asbestos-containing materials were analytically determined to be present.		
2037	Mechanical Room	HT-11	400 SF	Canvas with Parging Cement over Fibreglass
2038	Cleaners Closet	HF-34	35 SF	Black Mastic Suspected below Floor Tile and non Asbestos Mastic
2039	Men's Washroom	HC-18 HT-17 HT-06	240 SF 2 Units 3 LF	2'x 2' Transite Dot Ceiling Tile Insulated Cement Fittings on DHW Aircell Pipe Insulation on DHW
2039B	Cleaner's Closet – Supply	HT-14	1 Unit	Fire Door – Internal Paper
2040	Storage Room	HC-18 HT-14	32 SF 2 Units	2'x2' Transite Dot Ceiling Tile Fire Door – Internal Paper
2041	Orderly Room	HF-34	1122 SF	Black Mastic Suspect Beneath Rubber Flooring
2042	Sqn Admin Officer	HF-34	144 SF	Black Mastic Suspect Beneath Rubber Flooring
2043	Office	HF-34	144 SF	Black Mastic Suspect Beneath Rubber Flooring
2044	Fire/ Supply Room	HF-34	144 SF	Black Mastic Suspect Beneath Rubber Flooring
2045A	Telecomm. Room	HF-34	80 SF	Black Mastic Suspect Beneath Rubber Flooring
2045	Conference Room	HF-34 HC-18	736 SF 736 SF	Black Mastic Suspect Beneath Rubber Flooring 2'x 2' Transite Dot Ceiling Tile
2046	Meeting Room/ Lunchroom	HF-34	200 SF	Black Mastic Suspect Beneath Rubber Flooring
2047	Tammy's Kitchen/ Restaurant	No asbestos-containing materials were analytically determined to be present.		
2047A	Dumbwaiter/ Storage Room	No asbestos-containing materials were analytically determined to be present.		
2048	Mechanical Room	HT-22 HT-11 HT-02 HT-02 HT-20 HT-02 HT-18 HT-02 HT-16 HT-02 HT-16	1765 680 SF 6 LF 110 LF 11 Units 60 LF 5 Units 35 LF 1 Unit 10 LF 2 Units	White Block Insulation on Hot Water Line Canvas with Parging Cement over Fibreglass Magblock over Valve Magblock over LPS Line Insulated Cement Fittings on LPS Line Magblock Pipe Insulation on HWH Return Line Insulated Cement Fittings on HWH Return Line Magblock Pipe Insulation on N. HWH Supply Line Insulated Cement Fitting on N. HWH Supply Line Magblock Pipe Insulation on S. HWH Supply Line Insulated Cement Fittings on S. HWH Supply Line

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
		HT-07 HT-04 HT-10 HT-16 HT-18 HT-13	25 LF 3 Units 140 SF 2 Units 2 Units 1 Unit	Cardboard with Black Paper on DCW Line Insulated Cement Fittings on the DCW Line Magblock Tank Insulation on Condensate Insulated Cement Fittings on 3 " HWS to IE LAB Insulated Cement Fittings on 3 " HWR to IE LAB Vibration Gasket on HVAC Unit
2049	Office Vestibule	HF-22 HF-23 HW-03A HC-18	48 SF 16 SF 512 SF 64 SF	9" x 9" White with Black Streak Floor Tile 9" x 9" Olive Green with White Streak Drywall and Joint Compound 2'x 2' Transite Dot Ceiling Tile
2050A	Office	HF-22 HF-23 HW-03A HC-18	30 SF 90 SF 368 SF 120 SF	9" x 9" White with Black Streak Floor Tile 9" x 9" Olive Green with White Streak Floor Tile Drywall and Joint Compound 2'x2' Transite Dot Ceiling Tile
2050B	Office	HF-22 HF-23 HW-03A HC-18	80 SF 20 SF 400 SF 100 SF	9" x 9" White with Black Streak Floor Tile 9" x 9" Olive Green with White Streak Floor Tile Drywall and Joint Compound 2'x2' Transite Dot Ceiling Tile
2050C	Office	HF-22 HF-23 HW-03A HC-18	80 SF 50 SF 130 SF 130 SF	9" x 9" White with Black Streak Floor Tile 9" x 9" Olive Green with White Streak Floor Tile Drywall and Joint Compound 2'x2' Transite Dot Ceiling Tile
2051A	Main Office	HF-22 HF-23 HW-03A HC-18	147 SF 294 SF 376 SF 440 SF	9" x 9" White with Black Streak Floor Tile 9" x 9" Olive Green with White Streak Floor Tile Drywall and Joint Compound 2'x2' Transite Dot Ceiling Tile
2051B	Operations Zone	HF-22 HF-23 HW-03A HC-18	80 SF 20 SF 160 SF 100 SF	9" x 9" White with Black Streak Floor Tile 9" x 9" Olive Green with White Streak Floor Tile Drywall and Joint Compound 2'x2' Transite Dot Ceiling Tile
2051C	Office	HF-22 HF-23 HW-03A HC-18	80 SF 20 SF 160 SF 100 SF	9" x 9" White with Black Streak Floor Tile 9" x 9" Olive Green with White Streak Floor Tile Drywall and Joint Compound 2'x2' Transite Dot Ceiling Tile
2052	QM Main Office – Room 204A	HF-34 HW-03A	640 SF 256 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2053	Office/ Locker Room Vestibule	HF-34 HW-03A HT-14	60 SF 272 SF 1 Unit	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound Fire Door
2054	Locker Room	HF-34 HW-03A	60 SF 272 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2055	Mechanical Room	HT-20 HT-11 HT-18 HT-16 HT-07	1 Unit 898 SF 1 Unit 2 Units 3 LF	Insulated Cement Fitting from Steam Line Fibreglass with Parging from HVAC Unit Insulated Cement Fitting from “Return” to fan unit Insulated Cement Fitting from “Supply” to fan unit. Cardboard with Black Paper from the DCW

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
		HT-19 HT-13	2 Units 1 Unit	Insulated Cement Fitting from DCW Vibration Gasket
2056	Radio Control Room	HF-22 HF-23 HW-03A HW-06 HC-18	190 SF 90 SF 315 SF 64 SF 280 SF	9" x 9" White with Black Streak Floor Tile 9" x 9" Olive Green with White Streak Floor Tile Drywall and Joint Compound Transite Panel Board 2'x2' Transite Dot Ceiling Tile
2057	Telecomm Room	HF-22 HF-23 HW-03A HW-06 HC-18	96 SF 24 SF 90 SF 108 SF 280 SF	9" x 9" White with Black Streak Floor Tile 9" x 9" Olive Green with White Streak Floor Tile Drywall and Joint Compound Transite Panel Board 2'x2' Transite Dot Ceiling Tile
2058	Women's Washroom	HF-22 HF-23 HW-03A HW-06 HC-18	57 SF 38 SF 149 SF 171 SF 95 SF	9" x 9" White with Black Streak Floor Tile 9" x 9" Olive Green with White Streak Floor Tile Drywall and Joint Compound Transite Panel Board 2'x2' Transite Dot Ceiling Tile
2059	Storage Room	HF-41 HW-03A HW-06 HC-18	800 SF 640 SF 160 SF 800 SF	12" x 12" Navy Blue with Small White Streak Floor Tile with Black Mastic and 2 nd Layer White Floor Tile and Black Mastic Drywall and Joint Compound Transite Panel Board 2'x2' Transite Dot Ceiling Tile
2060	Storage Room	HF-41 HW-06 HC-18	216 SF 216 SF 216 SF	12" x 12" Navy Blue with Small White Streak Floor Tile with Black Mastic and 2 nd Layer White Floor Tile and Black Mastic Transite Panel Board 2'x2' Transite Dot Ceiling Tile
2061	Storage Room	HF-41 HW-03A HW-06 HC-18	144 SF 240 SF 120 SF 144 SF	12" x 12" Navy Blue with Small White Streak Floor Tile with Black Mastic and 2 nd Layer White Floor Tile and Black Mastic Drywall and Joint Compound Transite Panel Board 2'x2' Transite Dot Ceiling Tile
2062	Storage Room	HF-41 HW-03A HW-06 HC-18	144 SF 120 SF 240 SF 144 SF	12" x 12" Navy Blue with Small White Streak Floor Tile with Black Mastic and 2 nd Layer White Floor Tile and Black Mastic Drywall and Joint Compound Transite Panel Board 2'x2' Transite Dot Ceiling Tile
2063	Office	HF-34 HW-03A HW-06	144 SF 416 SF Unknown	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound Transite Panel Board
2063A	Office Vestibule	HF-34 HW-03A	241 SF 549 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2064	Office Space	HF-34 HW-03A	140 SF 384 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2065	Office 226	HF-34 HW-03A	240 SF 496 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2066	Office 227	HF-34 HW-03A	90 SF 304 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2067	Office 228	HF-34 HW-03A	140 SF 140 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
2068	Office 229	HF-34 HW-03A	80 SF 320 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2069	Office 230 Store Room	HF-34 HW-03A	80 SF 288 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2070	C Flight	HF-34 HW-03A	296 SF 544 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2071	Open Office Space	HF-34 HW-03A	296 SF 544 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2072	A3 Current OPS Office	HF-34 HW-03A	100 SF 320 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2073	Office	HF-34 HW-03A	100 SF 320 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2074	Office	HF-34 HW-03A	540 SF Unknown	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2075	Office	HF-34 HW-03A	96 SF 160 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2076	Office	HF-34 HW-03A	144 SF 384 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2077	436 SQNCO Commandant	HF-34 HW-03A	280 SF 320 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2078	Commanding Officer	HF-34 HW-03A	216 SF 336 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2079	Room 217	HF-34 HW-03A	144 SF 272 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2080	Lunchroom	HF-34 HW-03A	264 SF 528 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2081	Functional Space Not In Use			
2082	File/ Storage Room	HW-03A	224 SF	Drywall and Joint Compound
2083	Meeting/ Conference Room	HW-03A	480 SF	Drywall and Joint Compound
2084	Office 221	HF-34 HW-03A	320 SF 432 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2085	Office Corridor	HF-34 HW-03A	144 SF 480 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2086	Office 220	HF-34 HW-03A	360 SF 608 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2087	Office 222	HF-34 HW-03A	324 SF 576 SF	Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2088	Map Room	HF-38 HF-34 HW-03A	592 SF 592 SF 808 SF	12"x 12" Mustard Yellow with White Streak Floor Tile Black Mastic Suspect Beneath Rubber Flooring Drywall and Joint Compound
2089	Parachute Repair Room	HF-22 HF-23 HW-03A HW-06 HC-18 HT-14	963 SF 641 SF 540 SF 656 SF 1604 SF 1 Unit	9" x 9" White with Black Streak Floor Tile 9" x 9" Olive Green with White Streak Floor Tile Drywall and Joint Compound Transite Panel Board 2'x 2' Transite Dot Ceiling Tile Fire Door
2090	See Functional Space 1064 For Room Information			
2091	Mechanical Room 204 C West	HT-11 HT-24 HT-13	236 SF <1SF 10 Units	Canvas with Parging Cement over Fibreglass Debris Vibration Gasket
2092	Locker Room	HF-22 HF-23	336 SF 1008 SF	9" x 9" White with Black Streak Floor Tile 9" x 9" Olive Green with White Streak Floor Tile

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
		HC-18	1344 SF	2'x 2' Transite Dot Ceiling Tile
2093	Locker Room	HF-22	336 SF	9" x 9" White with Black Streak Floor Tile
		HF-23	1008 SF	9" x 9" Olive Green with White Streak Floor Tile
		HC-18	1344 SF	2'x 2' Transite Dot Ceiling Tile
2094	Men's Washroom	HC-18	240 SF	2'x 2' Transite Dot Ceiling Tile
2094A	Cleaners Closet	No asbestos-containing materials were analytically determined to be present.		
2095	Mechanical Room	HT-11	1388 SF	Fibreglass with Parging
		HT-21	1 Unit	Insulated Cement on Drain Line
		HT-20	2 Units	Insulated Cement on the LPS to HVAC Unit
		HT-13	6 Units	Vibration Gaskets
2096		HW-03A	544 SF	Drywall and Joint Compound
2097	CC-150 PLT-LDR	HF-34	500 SF	Black Mastic Suspect Beneath Rubber Flooring
		HW-03A	352 SF	Drywall and Joint Compound
2098	Office	HF-34	126 SF	Black Mastic Suspect Beneath Rubber Flooring
		HW-03A	296 SF	Drywall and Joint Compound
2099	Office	HF-34	126 SF	Black Mastic Suspect Beneath Rubber Flooring
		HW-03A	248 SF	Drywall and Joint Compound
2100	CBT Room	HF-34	210 SF	Black Mastic Suspect Beneath Rubber Flooring
		HW-03A	232 SF	Drywall and Joint Compound
		HT-21	1 Unit	Insulated Cement Fitting on the Drain Line
2101A	Office	HT-14	1 Unit	Fire Door
2101B	Computer Room (AAR Room)	HW-03A	276 SF	Drywall and Joint Compound
2101C	Closet	HW-03A	76 SF	Drywall and Joint Compound
2101D	Closet	HW-03A	76 SF	Drywall and Joint Compound
2101E	Closet	HW-03A	88 SF	Drywall and Joint Compound
2102	Men's Washroom	HC-18	260 SF	2'x2' Transite Dot Ceiling Tile
2102A	Cleaners Closet	No asbestos-containing materials were analytically determined to be present.		
2103		HF-34	180 SF	Black Mastic Below Floor Tile (suspect beneath rubber flooring)
		HC-18	180 SF	2'x 2' Transite Dot Ceiling Tile
2103A	Cleaners Closet	HT-06	6 LF	Aircell Pipe Insulation on the DHW Line
		HT-17	4 Units	Insulated Cement Fittings on the DHW Line
		HT-07	6 LF	Cardboard with Black Paper on the DCW Line
		HT-19	3 Units	Insulated Cement Fittings on the DCW Line
2104	Women's Washroom	HC-18	80 SF	2'x2' Transite Dot Ceiling Tile
2105	Mechanical Room	HT-11	400 SF	Fibreglass with Parging on the HVAC Unit
		HT-21	1 Unit	Insulated Cement Fittings on the Drain Line
		HT-13	4 Units	Vibration Gaskets on the HVAC Unit
2106	Functional Space Not In Use			
2107	2 nd Level North Corridor	HW-03A	1728 SF	Drywall and Joint Compound
		HW-06	140 SF	Transite Panel Board
2108A	2 nd Level East Corridor North End	HW-06	738 SF	Transite Panel Board
		HC-18	578 SF	2'x 2' Transite Dot Ceiling Tile
		HF-34	578 SF	Black Mastic Suspect Beneath Rubber Flooring
2108B	2 nd Level East Corridor Middle Section	HF-34	2116 SF	Black Mastic Suspect Beneath Rubber Flooring
		HW-06	2700 SF	Transite Panel Board
		HC-18	2116 SF	2'x 2' Transite Dot Ceiling Tile
2108C	2 nd Level East Corridor South Section	HF-34	574 SF	Black Mastic Present Beneath Rubber Flooring
		HW-06	738 SF	Transite Panel Board

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
		HC-18	574 SF	2'x 2' Transite Dot Ceiling Tile
2108D	Stairwell	No asbestos-containing materials were analytically determined to be present.		
2108E	Stairwell	No asbestos-containing materials were analytically determined to be present.		
2108F	Stairwell	No asbestos-containing materials were analytically determined to be present.		
2109A	West Corridor- North Section	HF-34	574 SF	Black Mastic Suspect Beneath Rubber Flooring
		HW-06	738 SF	Transite Panel Board
		HC-18	574 SF	2'x 2' Transite Dot Ceiling Tile
2109B	West Corridor – Middle Section	HF-34	2116 SF	Black Mastic Suspect Beneath Rubber Flooring
		HW-06	2700 SF	Transite Panel Board
		HC-18	2116 SF	2'x2' Transite Dot Ceiling Tile
2109C	West Corridor – South Section	HF-34	574 SF	Black Mastic Suspect Beneath Rubber Flooring
		HW-06	738 SF	Transite Panel Board
		HC-18	574 SF	2'x 2' Transite Dot Ceiling Tile
2109D	Stairwell South West Corner	No asbestos-containing materials were analytically determined to be present.		
2109E	Stairwell Center-South West	No asbestos-containing materials were analytically determined to be present.		
2109F	Stairwell Center West	No asbestos-containing materials were analytically determined to be present.		
2109G	Stairwell North West Corner	No asbestos-containing materials were analytically determined to be present.		
2110	South Corridor	HW-06	1548 SF	Transite Panel Board
		HC-18	1060 SF	2'x2' Transite Dot Ceiling Tile
		HF-34	1060 SF	Black Mastic Suspect Beneath Rubber Flooring
2110B	South End Stairwell	HW-06	210 SF	Transite Panel Board
		HT-11	284 SF	Fibreglass with Parging insulation on the HVAC Duct
		HT-21	1 Unit	Insulated Cement Fitting on the Drain Line
		HT-02	6 LF	Magblock Pipe Insulation on the Steam Line
		HF-34	40 SF	Black Mastic Suspect Beneath Rubber Flooring
Hanger Bays				
H001B	Hanger # 1 Bay	HT-02	99 LF	Magblock Pipe Insulation on the HPS Line
		HT-20	2 Units	Insulated Cement Fittings on the HPS Line
		HT-02	43 LF	3" Magblock Pipe Insulation on the LPS Line
		HT-02	7 LF	8" Magblock Pipe Insulation on the LPS Line
		HT-20	7 Units	Insulated Cement Fittings on the LPS Line
		HT-07	99 LF	8" Cardboard with Black Paper Pipe Insulation on the DCW
		HT-07	10 LF	3" Cardboard with Black Paper Pipe Insulation on the DCW
		HT-19	7 Units	Insulated Cement Fittings on the DCW Line
		HT-06	99 LF	8" Aircell Pipe Insulation on the DHW
		HT-06	15 LF	3" Aircell Pipe Insulation on the DHW
		HT-17	6 Units	Insulated Cement Fittings on the DHW Line
		HT-02	5 LF	3" Magblock Pipe Insulation on the HWH Supply Line
		HT-02	99 LF	8" Magblock Pipe Insulation on the HWH Supply Line
		HT-16	9 Units	Insulated Cement Fittings on the HWH Supply Line
		HT-02	99 LF	6" Magblock Pipe Insulation on the HWH Return Line
		HT-02	24 LF	3" Magblock Pipe Insulation on the HWH Return Line
		HT-18	11 Units	Insulated Cement Fittings on the HWH Return Line

<i>FUNCTIONAL SPACE ID #</i>	<i>ROOM NAME/NUMBER</i>	<i>HOMOGENEOUS MATERIAL No.</i>	<i>QUANTITY</i>	<i>ASBESTOS CONTAINING MATERIALS DESCRIPTION</i>
H002B	Hanger 2 Bay	HT-21	1 Unit	Insulated Cement Fitting on the Drain Line.
		HT-02	80 LF	Magblock Pipe Insulation on the HPS Line
		HT-20	2 Units	Insulated Cement Fittings on the HPS Line
		HT-02	45 LF	Magblock Pipe Insulation on the LPS Line
		HT-20	9 Units	Insulated Cement Fittings on the LPS Line
		HT-07	80 LF	8" Cardboard with Black Paper Pipe Insulation on the DCW
		HT-19	3 Units	Insulated Cement Fittings on the DCW
		HT-06	105 LF	Aircell Pipe Insulation on the DHW
		HT-17	9 Units	Insulated Cement Fittings on the DHW
		HT-16	3 Units	Insulated Cement Fittings on the HWH Supply Line
		HT-02	110 LF	Magblock Pipe Insulation on the HWH Supply Line
		HT-16	19 Units	Insulated Cement Fittings on the HWH Supply Line
		HT-18	2 Units	Insulated Cement Fittings on the HWH Return Line
		HT-02	95 LF	Magblock Pipe Insulation on the HWH Return Line
		HT-18	7 Units	Insulated Cement Fittings on the HWH Return Line
		HT-21	4 Units	Insulated Cement Fittings on the Drain Line
		HT-14	2 Units	Fire Door – Internal Paper
H003B	Hanger 3 Bay	HT-02	37 LF	Magblock Pipe Insulation on the LPS Line
		HT-20	6 Units	Insulated Cement Fittings on the LPS Line
		HT-21	6 Units	Insulated Cement Fittings on the Drain Line
		HT-02	65 LF	Magblock Pipe Insulation on the HPS Line
		HT-20	2 Units	Insulated Cement Fittings on the HPS Line
		HT-02	105LF	Magblock Pipe Insulation on the HWH Supply Line
		HT-16	18 Units	Insulated Cement Fittings on the HWH Supply Line
		HT-18	14 Units	Insulated Cement Fittings on the HWH Return Line
		HT-02	82 LF	Magblock Pipe Insulation on the HWH Return Line
		HT-06	104 LF	Aircell Pipe Insulation on the DHW
		HT-17	12 Units	Insulated Cement Fittings on the DHW
		HT-07	83 LF	8" Cardboard with Black Paper Pipe Insulation on the DCW
		HT-19	7 Units	Insulated Cement Fittings on the DCW
		HT-14	2 Units	Fire Door – Internal Paper
H004B	Hanger 4 Bay	HT-02	220 LF	Magblock Pipe Insulation on the HPS Line
		HT-02	190 LF	Magblock Pipe Insulation on the LPS Line
		HT-20	8 Units	Insulated Cement Fittings on the LPS Line
		HT-07	250 LF	8" Cardboard with Black Paper Pipe Insulation on the DCW
		HT-19	13 Units	Insulated Cement Fittings on the DCW
		HT-06	255 LF	Aircell Pipe Insulation on the DHW
		HT-17	12 Units	Insulated Cement Fittings on the DHW
		HT-02	370 LF	Magblock Pipe Insulation on the HWH Supply Line
		HT-16	41 Units	Insulated Cement Fittings on the HWH Supply

<i>FUNCTIONAL SPACE ID #</i>	<i>ROOM NAME/NUMBER</i>	<i>HOMOGENEOUS MATERIAL No.</i>	<i>QUANTITY</i>	<i>ASBESTOS CONTAINING MATERIALS DESCRIPTION</i>
		HT-02	220 LF	Line Magblock Pipe Insulation on the HWH Return Line
		HT-21	6 Units	Insulated Cement Fittings on the Drain Line
		HT-14	2 Units	Fire Door – Internal Paper
H005B	Hanger 5 Bay	HT-02	100 LF	Magblock Pipe Insulation on the HPS Line
		HT-20	2 Units	Insulated Cement Fittings on the HPS Line
		HT-02	302 LF	Magblock Pipe Insulation on the LPS Line
		HT-20	19 Units	Insulated Cement Fittings on the LPS Line
		HT-07	130 LF	Cardboard with Black Paper Pipe Insulation on the DCW
		HT-19	2 Units	Insulated Cement Fittings on the DCW
		HT-06	231 LF	Aircell Pipe Insulation on the DHW
		HT-17	8 Units	Insulated Cement Fittings on the DHW
		HT-16	9 Units	Insulated Cement Fittings on the HWH Supply Line
		HT-02	130 LF	Magblock Pipe Insulation on the HWH Return Line
		HT-18	8 Units	Insulated Cement Fittings on the HWH Return Line
		HT-02	154 LF	Magblock Pipe Insulation on the HWH Return Line
		HT-14	2 Units	Fire Door – Internal Paper
H006B	Hanger 6 Bay	HT-21	2 Units	Insulated Cement Fittings on the Drain Line
		HT-02	80 LF	Magblock Pipe Insulation on the HPS Line
		HT-20	2 Units	Insulated Cement Fittings on the HPS Line
		HT-02	200 LF	Magblock Pipe Insulation on the LPS Line
		HT-20	15 Units	Insulated Cement Fittings on the LPS Line
		HT-07	91 LF	Cardboard with Black Paper Pipe Insulation on the DCW
		HT-19	8 Units	Insulated Cement Fittings on the DCW
		HT-06	83 LF	Aircell Pipe Insulation on the DHW
		HT-17	5 Units	Insulated Cement Fittings on the DHW
		HT-02	121 LF	Magblock Pipe Insulation on the HWH Supply Line
		HT-16	13 Units	Insulated Cement Fittings on the HWH Supply Line
		HT-02	168 LF	Magblock Pipe Insulation on the HWH Return Line
		HT-18	12 Units	Insulated Cement Fittings on the HWH Return Line
Hangers				
H001	Aircraft Hanger 1	HW-06	3600 SF	Transite Panel Board
		HT-07	140 LF	Cardboard with Black Paper Pipe Insulation on the DCW
		HT-19	10 Units	Insulated Cement Fittings on the DCW
		HT-21	5 Units	Insulated Cement Fittings on the Drain Line
		HT-14	2 Units	Fire Door – Internal Paper
H002	Aircraft Hanger 2	HT-21	5 Units	Insulated Cement Fittings on the Drain Line
		HT-14	2 Units	Fire Door – Internal Paper
H003	Aircraft Hanger 3	HW-06	3600 SF	Transite Panel Board
		HT-07	186 LF	Cardboard with Black Paper Pipe Insulation on the DCW
		HT-21	5 Units	Insulated Cement Fittings on the Drain Line

FUNCTIONAL SPACE ID #	ROOM NAME/NUMBER	HOMOGENEOUS MATERIAL No.	QUANTITY	ASBESTOS CONTAINING MATERIALS DESCRIPTION
H004	Aircraft Hanger 4	HW-06 HT-07 HT-19 HT-21	3600 SF 120 LF 6 Units 14 Units	Transite Panel Board Cardboard with Black Paper Pipe Insulation on the DCW Insulated Cement Fittings on the DCW Insulated Cement Fittings on the Drain Line
H005	Aircraft Hanger 5	HT-21	14 Units	Insulated Cement Fittings on the Drain Line
H006	Aircraft Hanger 6	HW-06 HT-07 HT-19 HT-21	3600 SF 180 LF 2 Units 14 Units	Transite Panel Board Cardboard with Black Paper Pipe Insulation on the DCW Insulated Cement Fittings on the DCW Insulated Cement Fittings on the Drain Line
Mezzanine Level				
M003A	Mezzanine above Hanger 3 - Common Area	HW-06 HT-07	720 SF 84 LF	Transite Panel Board Cardboard with Black Paper Pipe Insulation on the DCW
M003B	Mezzanine above Hanger 3 - AMSO Support Office	No asbestos-containing materials were analytically determined to be present.		
M003C	Mezzanine above Hanger 3 - Common Area	HW-06 HT-07 HT-19	720 SF 49 LF 1 Unit	Transite Panel Board Cardboard with Black Paper Pipe Insulation on the DCW Insulated Cement Fittings on the DCW
M003D	Mezzanine above Hanger 3 - Office	No asbestos-containing materials were analytically determined to be present.		
M006A	Mezzanine above Hanger 6 - Common Area	HW-06 HT-07	2300 SF 92 LF	Transite Panel Board Cardboard with Black Paper Pipe Insulation on the DCW
M006B	Mezzanine above Hanger 6 - Office	No asbestos-containing materials were analytically determined to be present.		
M007C	Mezzanine above Hanger 6 - AMO Support	No asbestos-containing materials were analytically determined to be present.		
Building Exterior				
E001	Building Exterior	HW-06	62370 SF	Transite Panel Board
E002	Exterior Storage Room - South Side	HC-18 HT-07 HT-19	96 SF 6 LF 2 Units	Transite Ceiling Panel Board Cardboard with Black Paper Pipe Insulation on the DCW Insulated Cement Fittings on the DCW
E003	Exterior Electrical & Generator Room - North Side	HC-18	100 SF	Transite Ceiling Panel Board
E004	Exterior New Boiler Room - North Side	No asbestos-containing materials were analytically determined to be present		
Rooftop				
R001	Roof Top Storage Room	HW-06	Storage – 20 Panels	Transite Panel Board
R002	Lower Roof Top (Centre of Building)	HW-06	8332 SF	Transite Panel Board Roofing materials were not sampled to maintain functional integrity.

TABLE 6-3: ASBESTOS QUANTITY SUMMARY TABLE

Location	Flooring (SF)	Suspect Asbestos Mastic below new flooring (SF)	Thermal (LF)	Thermal (SF)	Insulated Cement Fittings (units)	Vibration Gasket (units)	Transite (SF)	Drywall & Joint Compound (SF)	Texture Coat (SF)	Fire Door (units)	Suspect Materials
First Floor	18855	820	12950	2223	1358	16	22706	-	288	26	Cloth Wiring
Second Floor	10424	23203	273	6523	49	27	39464	27491	-	6	Cloth Wiring
Mezzanine	-	-	225	-	1	-	3740	-	-	-	Cloth Wiring
Hangers	-	-	626	-	75	-	14 400	-	-	4	Cloth Wiring
Hanger Bays	-	-	4885	-	351	-	-	-	-	8	Cloth Wiring
Exterior	-	-	6	-	2	-	62566	-	-	-	-
Rooftop	-	-	-	-	-	-	8332 + 20 Panels	-	-	-	Roofing Materials
Total	29279	24023	13223	8746	1836	43	151208 +	27491	288	44	-

Notes for Tables 6-2 & 6-3:

SF – square foot

LF – linear foot

Quantities are approximated.

Due to visibility issues, such as limited access above the solid transite ceiling tiles, additional quantities maybe present.

6.3 PAINT SAMPLING RESULTS

A total of sixty-six (66) paint samples were collected throughout the building for analysis of lead, arsenic and mercury content. The analytical results are provided in Table 6-4, and laboratory analysis certificates are provided in Appendix A2. Figures 1-18 indicates locations of paint coatings containing lead.

TABLE 6-4A: RESULTS OF PAINT ANALYSES

Sample Description	Sample No.	Mercury ($\mu\text{g/g}$)	Arsenic ($\mu\text{g/g}$)	Lead ($\mu\text{g/g}$)	Sample Location
Criteria	N/A	10	50	5000	
Off White with Grey Green Base	2836-19-Pb01	<2	<50	488	1001 - Wall
Grey Green	2836-19-Pb02	<2	<50	623	2109D - Wall
Medium Green with Bright Orange Base	2836-19-Pb03	<2	<50	13400	1001 - Door
Fire Engine Red	2836-19-Pb04	<2	<50	204	1030 – Fire Extinguisher Board
Silver with Yellow Base	2836-19-Pb05	<2	<50	102000	1001 – Garage Door
White with Cream Base	2836-19-Pb06	26	<50	78	1002 – Walls
Cream	2836-19-Pb07	9	<50	96	1002 – Above CT
Mint Green	2836-19-Pb08	8	<50	82	1007 – Upper Drywall
Dark Black	2836-19-Pb09	2	<50	11200	1007 – Pipe
Pale Grey with Pale Yellow & Light Blue Base	2836-19-Pb10	<2	<50	189	1008 – Wall
Mint Blue	2836-19-Pb11	<2	<50	256	1083D – Conduit off Wall
Dark Grey	2836-19-Pb12	<2	<50	1590	1008 – Floor
Grey with Sky Blue	2836-19-Pb13	<2	<50	<50	1009 – Wall
Robin's Egg Blue	2836-19-Pb14	<2	<50	<50	1010 – Wall
Steel Grey	2836-19-Pb15	<2	<50	105	1014 – Floor
Blue Grey	2836-19-Pb16	<2	<50	<50	1012 – Wall
Light Beige	2836-19-Pb17	<2	<50	<50	1014 – Wall
White	2836-19-Pb18	<2	<50	<50	1015 – Wall
Fire Engine Red with Medium Green & Grey Base	2836-19-Pb19	<2	<50	126	1020 – North Door
Black	2836-19-Pb20	<2	<50	192	1137 – Walls & Deck

Sample Description	Sample No.	Mercury ($\mu\text{g/g}$)	Arsenic ($\mu\text{g/g}$)	Lead ($\mu\text{g/g}$)	Sample Location
Rusty Orange	2836-19-Pb21	<2	<50	145000	1021A
Ocean Blue with Navy Blue & White Base	2836-19-Pb22	<2	<50	240	1021A – Door & Frame
Grey Green with Baby Blue and Navy Blue Base	2836-19-Pb23	<2	<50	409	1021 -Wall
Epoxy Coating	2836-19-Pb24	<2	<50	<50	1021A – Floor
Army Green	2836-19-Pb25	5	<50	2190	1022 – Floor
Medium Grey	2836-19-Pb26	<2	<50	<50	H004B – Floor
Safety Yellow with Army Green	2836-19-Pb27	<2	<50	79400	1024 – Floor
Royal Blue	2836-19-Pb28	<2	<50	86	1027 – Door
Pale Yellow	2836-19-Pb29	<2	<50	<50	1028 – Walls
Dusty Rose with Turquoise Base	2836-19-Pb30	<2	<50	787	1100 – Walls
Baby Blue	2836-19-Pb31	<2	<50	3090	1030 – Radiator / Walls
Traffic Yellow	2836-19-Pb32	<2	<50	110000	1030 – Floor
Bright Orange	2836-19-Pb33	<2	<50	175000	1038 – Door
Royal Grey	2836-19-Pb34	<10	<50	<50	1028 – Door Frame
Grey White with Turquoise Base	2836-19-Pb35	5	<50	1620	1035 – Door Frame
Fluorescent Red	2836-19-Pb36	<2	<50	67400	1077 – Floor
Medium Cream with Baby Blue and Yellow Base	2836-19-Pb37	<2	<50	491	1077 – Walls
Silver	2836-19-Pb38	<2	<50	351	H003B – Above Doorway
Shiny Black	2836-19-Pb39	<2	54	2920	H003B – Handrails
Sky Blue	2836-19-Pb40	<2	<50	583	H003B – Wall
Dark Taupe	2836-19-Pb41	<2	<50	102	H003B – Garage Door
Light Yellow	2836-19-Pb42	<2	<50	<50	1090 - Wall
Airforce Blue with Mint Blue Base	2836-19-Pb43	<2	<50	<50	1094 – Door
Dark Blue, Baby Blue, Black with Light Grey	2836-19-Pb44	<2	<50	603	H002B - Wall
Light Lemon with Grey Base	2836-19-Pb45	<2	<50	719	1105 – Duct Work
Ocean Blue	2836-19-Pb46	<2	<50	<50	2109C – Door
Rose with Mint Green Base	2836-19-Pb47	<2	<50	1460	1123 - Wall
Bright Red	2836-19-Pb48	<2	<50	<50	1137 – Exterior Door

Sample Description	Sample No.	Mercury ($\mu\text{g/g}$)	Arsenic ($\mu\text{g/g}$)	Lead ($\mu\text{g/g}$)	Sample Location
Dull Steel Grey	2836-19-Pb49	<2	<50	50	1047 – Stairs / Railing
Light Army Grey	2836-19-Pb50	<2	<50	4120	H001 – Water Fountain
Taupe	2836-19-Pb51	<2	<50	<50	2007A – Wall
Rose	2836-19-Pb52	<2	<50	<50	2012 – Wall
Off-White with Mint Green Base	2836-19-Pb53	<2	<50	1470	1007 – Wall
Off-White with Mint Blue Base	2836-19-Pb54	13	<50	<50	1007 – Wall
Lime Green with Light Lime Green Base	2836-19-Pb55	<2	<50	2080	1008 – Wall
Dusty Grey	2836-19-Pb56	<2	<50	83	1019 – Floor
Slate Grey	2836-19-Pb57	<2	<50	547	1021A – Upper Wall
Light Lime Green	2836-19-Pb58	2	<50	4410	2092 – Pipe Line
Multilayer Blue	2836-19-Pb59	<2	<50	1340	2110B- Wall
Taupe Purple	2836-19-Pb60	5	<50	<50	2041 – Door Frame
Very Light Dusty Rose	2836-19-Pb61	<2	<50	<50	2041 – Wall
Airforce Blue with Rust Orange Base	2836-19-Pb62	<2	<50	82900	E001 – North Side Door
Medium Light Blue	2836-19-Pb63	11	<50	<50	2059 – Wall
Grey Epoxy	2836-19-Pb64	<2	<50	<50	2102 – Floor
Fluorescent Orange	2836-19-Pb65	<2	<50	85300	E001 – Conduit Piping
Primary Yellow with Multi-layer Blue Base	2836-19-Pb66	<2	<50	34900	H003 - Wall

Notes for Table 6-4:

$\mu\text{g/g}$ – microgram per gram (Note: $1 \mu\text{g/g} = 1 \text{ mg/kg} = 1 \text{ ppm}$)

Shading indicates result is above appropriate criteria with exception to Arsenic, which is greater than analytical detection Lead criterion from US Department of Housing and Urban Development, *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*, Chapter 7, 1997 Revision.

Mercury and criteria from Health Canada, *Hazardous Products (Liquid Coating Materials) Regulations*

The complete laboratory results are provided in Appendix A2.

Maroon, Brown, Forest Green, Chocolate Brown, Pale Mint Green, Beige and Army Grey were not tested to preserve the cosmetic integrity of the painted surfaces.

6.3.1 Lead

Eleven (11) of the sixty-six (66) paint coatings were analytically identified to contain lead concentrations greater than 5000 ppm.

6.3.2 Mercury

Three (3) of the sixty-six (66) coatings submitted for analytical testing contain mercury above 10 ppm, which is the proposed limit for mercury in children's toys (Hazardous Products Act).

6.3.3 Arsenic

One (1) of the sixty-six (66) coatings submitted for analytical testing were identified as having an arsenic concentration greater than the detection limit.

Table 6-5 summarizes the locations and quantities of paints identified as lead, mercury or arsenic containing.

TABLE 6-5: SUMMARY OF LOCATIONS OF PAINT COATINGS WITH KNOWN HAZARDOUS COMPONENTS

Functional Space ID #	Room Name	Paint Coating Description	Hazardous Components
<i>First Floor</i>			
1001	Canteen	Silver with Yellow Base Medium Green with Bright Orange Base	Lead Lead
1002	Office Corridor	White with Cream Base	Mercury
1003	"A Crewlead Office"	White with Cream Base	Mercury
1004	Office	Medium Green with Bright Orange Base White with Cream Base	Lead Mercury
1007	Tool Room / Computer Stations	Off White with Baby Blue Base Bright Orange Dark Black	Mercury Lead Lead
1008	Pump Room	Dark Black Bright Orange Safety Yellow	Lead Lead Lead
1009	Office	Bright Orange	Lead
1010	SNAG Recovery Debrief Room Reception Desk	Bright Orange	Lead
1010A	Front Entranceway	Bright Orange	Lead
1011	Kitchen	Grey/ Green with Bright Orange Base Bright Orange	Lead Lead
1021A	Men's Washroom Entrance	Rusty Orange	Lead
1021	Men's Washroom	Rusty Orange	Lead

Functional Space ID #	Room Name	Paint Coating Description	Hazardous Components
1022A	Mechanical Room	Bright Orange Rusty Orange	Lead Lead
1022	Fan Room	Bright Orange	Lead
1024	Electrical Room	Bright Orange Safety Yellow with Army Green Base Mint Green with Dark Black Base	Lead Lead Lead
1025	Mechanical Room	Bright Orange Rusty Orange	Lead Lead
1026	Fan Room	Rusty Orange	Lead
1027	Electrical Storage Room	Bright Orange Rusty Orange	Lead Lead
1028	Office	Royal Blue with Bright Orange Base Bright Orange	Lead Lead
1029	Cafeteria/ Lunchroom	Royal Blue with Bright Orange Base	Lead
1030	Aircraft & Supply Flight	Safety Yellow Traffic Yellow Bright Orange Fire Engine Red over Dark Black Rusty Orange Maroon	Lead Lead Lead Lead Lead Not Sampled
1032	Office	Bright Orange Rusty Orange	Lead Lead
1033	IT Department - Lab Area	Rusty Orange	Lead
1034	IT Department - Storage Room	Rusty Orange	Lead
1035	IT Help Desk	Rusty Orange	Lead
1037	Mechanical Room	Bright Orange Rusty Orange Safety Yellow	Lead Lead Lead
1038	Mechanical Room	Bright Orange	Lead
1039	Fan Room	Bright Orange Dark Black	Lead Lead
1040	Lunch Room	Bright Orange	Lead
1041	Battery Storage/ Charge Room	Bright Orange	Lead
1043	Corridor	Bright Orange Rusty Orange	Lead Lead
1045	Office	Rusty Orange	Lead
1046	Office	Bright Orange	Lead
1047	Equipment Room	Mint Green with Rusty Orange Base	Lead
1047A	Mezzanine Level	Safety Yellow Rusty Orange	Lead Lead
1050	HAZMAT Storage	Safety Yellow Bright Orange	Lead Lead
1051	Storage	Rusty Orange	Lead
1052	Electrical Room	Safety Yellow Rusty Orange	Lead Lead
1053	Women's Change Room	Bright Orange	Lead

Functional Space ID #	Room Name	Paint Coating Description	Hazardous Components
1054	Corridor to Women's Change Room	Bright Orange Rusty Orange	Lead Lead
1054B	Women's Shower	Bright Orange Rusty Orange	Lead Lead
1055	Women's Washroom	Bright Orange Rusty Orange	Lead Lead
1056	Supply Room	Bright Orange	Lead
1057	Canteen	Bright Orange	Lead
1058	Parachute Storage	Rusty Orange Bright Orange	Lead Lead
1059	Mechanical Room	Rusty Orange Bright Orange	Lead Lead
1060	Fan Room	Bright Orange Dark Black	Lead Lead
1062	Storage/ Locker Room	Bright Orange	Lead
1063	Explosives Storage Room	Bright Orange	Lead
1064	Parachute Storage Room	Bright Orange Shiny Black	Lead Arsenic
1065	ALSE Supervisor	Bright Orange	Lead
1066	Office	Bright Orange	Lead
1068	Telecomm Room	Bright Orange Rusty Orange	Lead Lead
1069	Sprinkler Room	Bright Orange	Lead
1070	Office - Metal Workshop	Rusty Orange	Lead
1071	Tool Crib	Bright Orange Brown	Lead Not Sampled
1072	Metal Workshop	Bright Orange Rusty Orange Silver with Yellow	Lead Lead Lead
1073	Metal Shop	Bright Orange Brown	Lead Not Sampled
1075	Welding Shop	Rusty Orange Traffic Yellow	Lead Lead
1076	Machine Shop	Rusty Orange	Lead
1077	Machine Shop	Safety Yellow Rusty Orange	Lead Lead
1078	Mechanical Room	Bright Orange	Lead
1079	Fan Room	Rusty Orange Bright Orange	Lead Lead
1081	Stairwell	Bright Orange Shiny Black	Lead Arsenic
1082	Entrance Room	Bright Orange	Lead
1083A	Main Corridor North Entrance to Bays 1 & 6	Bright Orange Rusty Orange Safety Yellow Dark Black	Lead Lead Lead Lead
1083B	Main Corridor Bays 1 & 6 to Bays 2 & 5	Bright Orange Rusty Orange Safety Yellow Dark Black Traffic Yellow	Lead Lead Lead Lead Lead

Functional Space ID #	Room Name	Paint Coating Description	Hazardous Components
1083C	Main Corridor Bays 2 & 5 to Bays 3 & 4	Bright Orange Safety Yellow Traffic Yellow Fluorescent Red	Lead Lead Lead Lead
1083D	Main Corridor Bays 3 & 4 to South Entrance	Bright Orange Rusty Orange Safety Yellow Traffic Yellow Fluorescent Red	Lead Lead Lead Lead Lead
1084	Electrical Room	Safety Yellow	Lead
1085	Mechanical Room	Bright Orange Rusty Orange	Lead Lead
1086	Mechanical Room	Bright Orange	Lead
1087	Supply & Aircraft Support Flight	Safety Yellow Bright Orange Rusty Orange	Lead Lead Lead
1089	Office	Rusty Orange	Lead
1094	Lunch Room	Rusty Orange	Lead
1095	Mechanical Room	Bright Orange Rusty Orange	Lead Lead
1096	Fan Room	Bright Orange	Lead
1097	Lab Testing	Rusty Orange Traffic Yellow	Lead Lead
1098	Mechanical Power Room	Bright Orange Rusty Orange	Lead Lead
1099	Tool Crib	Rusty Orange	Lead
1100	Office	Rusty Orange	Lead
1102	Office	Rusty Orange	Lead
1104	Office	Rusty Orange	Lead
1108	Office Room	Bright Orange	Lead
1115	Stairwell / Landing	Bright Orange	Lead
1117	Office	Bright Orange	Lead
1119	Electrical Room	Safety Yellow Traffic Yellow	Lead Lead
1120	Men's Washroom	Rusty Orange	Lead
1121	Barber Shop	Rusty Orange	Lead
1122	Entrance to Men's Washroom	Rusty Orange	Lead
1122B	Custodian Storage	Rusty Orange	Lead
1123	Men's Washroom	Rusty Orange	Lead
1124	Mechanical Room Entrance	Bright Orange	Lead
1126	Women's Washroom	Bright Orange Forest Green	Lead Not Sampled
1127	Women's Change Room	Bright Orange Dark Black	Lead Lead
1128	Large Office Area	Bright Orange	Lead
1131	AMCRO Corridor	Bright Orange	Lead
Second Level			
2003	Mechanical Room	Rusty Orange Bright Orange	Lead Lead
2005	Lunch Room	Taupe with Bright Orange Base	Lead



Functional Space ID #	Room Name	Paint Coating Description	Hazardous Components
2007	Office - Deputy Cabin Crew Leader	Rusty Orange	Lead
2007A	Office - Cabin Crew Leader	Rusty Orange	Lead
2011	Mechanical Area	Rusty Orange Bright Orange	Lead Lead
2012	Briefing Room	Rusty Orange	Lead
2014	Squadron Offices	Rusty Orange	Lead
2015	Commander Secretary Office	Rusty Orange	Lead
2016	Commander Officer Office	Rusty Orange	Lead
2017	Deputy Commanding Officer Office	Rusty Orange	Lead
2018	Storage Room	Rusty Orange	Lead
2020	Office	Rusty Orange	Lead
2021	437 "T" Squadron Corridor	Rusty Orange	Lead
2025	437 "T" Squadron Admin Officer Office	Rusty Orange	Lead
2029A	Storage Area	Medium Light Blue	Mercury
2029	Main Office	Medium Light Blue	Mercury
2030	Office	Medium Light Blue Rusty Orange	Mercury Lead
2031	Office Room	Medium Light Blue Rusty Orange	Mercury Lead
2032	Office Room	Medium Light Blue Rusty Orange	Mercury Lead
2033	Briefing Room	Chocolate Brown Royal Blue with Bright Orange Base	Not Sampled Lead
2033A	Telecomm. Room	Medium Light Blue Rusty Orange	Mercury Lead
2035	Men's Washroom	Rusty Orange	Lead
2036	Women's Washroom & Locker Room	Safety Yellow Rusty Orange	Lead Lead
2037	Mechanical Room	Rusty Orange Bright Orange Dark Black	Lead Lead Lead
2038	Cleaner's Closet	Rusty Orange	Lead
2039	Men's Washroom	Rusty Orange Bright Orange Medium Light Blue	Lead Lead Mercury
2039B	Cleaners Closet - Supply	Rusty Orange Bright Orange	Lead Lead
2040	Storage Room	Bright Orange Medium Light Blue	Lead Mercury
2041	Orderly Room	Bright Orange	Lead
2042	Sqn Admin Officer	Rusty Orange	Lead
2043	Office	Rusty Orange	Lead
2044	Fire/Supply Room	Rusty Orange	Lead
2046	Meeting Room/ Lunchroom	Rusty Orange	Lead
2047	Tammy's Kitchen/ Restaurant	Safety Yellow Rusty Orange	Lead Lead
2047A	Dumbwaiter/ Storage Room	Rusty Orange	Lead
2048	Mechanical Room	Rusty Orange Bright Orange	Lead Lead



Functional Space ID #	Room Name	Paint Coating Description	Hazardous Components
		Dark Black	Lead
2049	Office Vestibule	Dusty Rose with Dark Black Base	Lead
2050B	Office	Rusty Orange	Lead
2050C	Office	Rusty Orange	Lead
2050D	Office	Rusty Orange	Lead
2050E	Centre Vestibule	Rusty Orange	Lead
2051A	Safety - Main Office	Pale Mint Green Rusty Orange	Not Sampled Lead
2051B	Operations Zone	Rusty Orange	Lead
2051C	Office	Rusty Orange	Lead
2052	QM Main Office	Rusty Orange	Lead
2053	Office/ Locker Room Vestibule	Royal Blue with Bright Orange Base Royal Grey with Bright Orange Base	Lead Lead
2054	Locker Room	Rusty Orange	Lead
2055	Mechanical Room	Rusty Orange Bright Orange	Lead Lead
2059	Storage Room	Medium Light Blue	Mercury
2060	Storage Room	White with Medium Light Blue Medium Light Blue	Mercury Mercury
2061	Storage Room	White with Medium Light Blue Medium Light Blue	Mercury Mercury
2062	Storage Room	White with Medium Light Blue	Mercury
2063A	Office Vestibule #251	Rusty Orange	Lead
2064	Office Space	Rusty Orange	Lead
2065	Office 226	Rusty Orange	Lead
2066	Office 227	Rusty Orange	Lead
2070	C Flight	Rusty Orange	Lead
2071	Open Office Space	Rusty Orange	Lead
2072	A3 Current OPS Office	Rusty Orange	Lead
2073	Office	Rusty Orange	Lead
2077	Room 269	Rusty Orange	Lead
2078	Commanding Officer	Rusty Orange	Lead
2079	Room 217	Rusty Orange	Lead
2080	Lunchroom	Rusty Orange	Lead
2082	File/ Storage Room	Rusty Orange	Lead
2083	Meeting/ Conference Room	Beige	Not Sampled
2084	Office 221	Rusty Orange	Lead
2085	Office Corridor	Rusty Orange	Lead
2086	Office 220	Rusty Orange	Lead
2087	Office 222	Rusty Orange	Lead
2088	Map Room	Beige	Not Sampled
2089	Parachute Repair Room	Rusty Orange	Lead
2091	Mechanical Room 204 C West	Rusty Orange Army Grey	Lead Not Sampled
2092	Locker Room	Bright Orange	Lead
2093	Locker Room	Bright Orange Rusty Orange	Lead Lead



Functional Space ID #	Room Name	Paint Coating Description	Hazardous Components
2094	Men's Washroom	Bright Orange	Lead
2094A	Cleaners Closet	Bright Orange Rusty Orange	Lead Lead
2095	Mechanical Room	Bright Orange Rusty Orange Safety Yellow	Lead Lead Lead
2096	Office Cubicles	Rusty Orange	Lead
2097	CC-150 PLT-LDR	Rusty Orange	Lead
2101A	Office	Rusty Orange	Lead
2101B	Computer Room (AAR Room)	Rusty Orange	Lead
2101C	Closet	Rusty Orange	Lead
2101D	Closet (Storage)	Rusty Orange	Lead
2101E	Closet (Storage)	Rusty Orange	Lead
2102	Men's Washroom	Rusty Orange	Lead
2102A	Cleaners Closet	Rusty Orange	Lead
2103	Change Room	Bright Orange Rusty Orange	Lead Lead
2103A	Cleaners Closet	Bright Orange Rusty Orange	Lead Lead
2104	Women's Washroom	Bright Orange Rusty Orange	Lead Lead
2105	Mechanical Room	Bright Orange Rusty Orange	Lead Lead
2107	2nd Level North Corridor	Rusty Orange	Lead
2108A	2nd Level East Corridor North End	Bright Orange Rusty Orange	Lead Lead
2108B	2nd Level East Corridor (Center Section)	Bright Orange Rusty Orange	Lead Lead
2108C	2nd Level East Corridor (South Section)	Bright Orange Rusty Orange (Under Baby Blue)	Lead Lead
2108D	Stairwell	Bright Orange Rusty Orange Shiny Black	Lead Lead Arsenic
2108E	Stairwell	Bright Orange Rusty Orange Shiny Black Pale Yellow with Bright Orange Base	Lead Lead Arsenic Lead
2108F	Stairwell	Bright Orange Rusty Orange Shiny Black Pale Yellow with Bright Orange Base	Lead Lead Arsenic Lead
2109A	West Corridor - North End	Baby Blue with Rusty Orange Bright Orange	Lead Lead
2109B	West Corridor - Center Section	Bright Orange Rusty Orange (Under Baby Blue)	Lead Lead



Functional Space ID #	Room Name	Paint Coating Description	Hazardous Components
2109C	West Corridor - South Section	Bright Orange Royal Grey with Bright Orange Base Cream with Bright Orange Base Baby Blue with Blue Grey and Rusty Orange Base	Lead Lead Lead Lead
2109D	Stairwell South West Corner	Bright Orange Rusty Orange Shiny Black Pale Yellow with Bright Orange Base	Lead Lead Arsenic Lead
2101E	Stairwell Centre - South West	Bright Orange Rusty Orange Shiny Black Pale Yellow with Bright Orange Base	Lead Lead Arsenic Lead
2109F	Stairwell - Center West	Bright Orange Rusty Orange Shiny Black Pale Yellow with Bright Orange Base	Lead Lead Arsenic Lead
2109G	Stairwell - North West Corner	Bright Orange Rusty Orange Shiny Black Pale Yellow with Bright Orange Base	Lead Lead Arsenic Lead
2110B	South End Stairwell	Bright Orange Rusty Orange Shiny Black Medium Light Blue	Lead Lead Arsenic Mercury
Mezzanine Level			
M003A	Mezzanine above Hanger 3 - Common Area	Rusty Orange Safety Yellow	Lead Lead
M003C	Mezzanine above Hanger 3 - Common Area	Rusty Orange Safety Yellow	Lead Lead
M006A	Mezzanine above Hanger 6 - Common Area	Rusty Orange Safety Yellow	Lead Lead
Hanger Bays			
H001B	Hanger 1 Bay	Bright Orange Rusty Orange Safety Yellow Dark Black	Lead Lead Lead Lead
H001	Aircraft Hanger 1	Rusty Orange Safety Yellow Traffic Yellow	Lead Lead Lead

Functional Space ID #	Room Name	Paint Coating Description	Hazardous Components
H002B	Hanger 2 Bay	Silver with Yellow Base	Lead
H002	Aircraft Hanger 2	Rusty Orange Safety Yellow Traffic Yellow	Lead Lead Lead
H003B	Hanger 3 Bay	Shiny Black Dark Black	Arsenic Lead
H003	Aircraft Hanger 3	Bright Orange Rusty Orange Safety Yellow Traffic Yellow Primary Yellow with Multi-Layer Blue Base	Lead Lead Lead Lead Lead
H004B	Hanger 4 Bay	Bright Orange Rusty Orange Safety Yellow	Lead Lead Lead
H004	Aircraft Hanger 4	Bright Orange Rusty Orange Safety Yellow Traffic Yellow	Lead Lead Lead Lead
H005B	Hanger 5 Bay	Bright Orange Rusty Orange Safety Yellow Shiny Black	Lead Lead Lead Arsenic
H005	Aircraft Hanger 5	Traffic Yellow Safety Yellow Rusty Orange	Lead Lead Lead
H006B	Hanger 6 Bay	Rusty Orange Safety Yellow	Lead Lead
H006	Aircraft Hanger 6	Traffic Yellow Safety Yellow Rusty Orange	Lead Lead Lead
Exterior			
E001	Building Exterior	Airforce Blue with Rust Orange Base Fluorescent Orange Rusty Orange	Lead Lead Lead
E002	Exterior Storage Room - South Side	Bright Orange	Lead
E003	Exterior Electrical & Generator Room - North Side	Rusty Orange	Lead
E004	Exterior New Boiler Room - North Side	Safety Yellow Airforce Blue with Rust Orange Base	Lead Lead

Functional Space ID #	Room Name	Paint Coating Description	Hazardous Components
<i>Roof Top</i>			
R001	Roof Top Storage Room	Bright Orange	Lead
R002	Lower Roof Top (Centre of Building)	Rusty Orange	Lead
		Airforce Blue with Rust Orange Base	Lead

6.4 BALLASTS AND TRANSFORMERS

Numerous brands of fluorescent light ballasts are found within the 52 North Star Drive facility. Ballast codes General Electric 16A240, Gold Label 17A240T and GE 0605 16A125 are confirmed to contain PCB. Ballast codes Intersafe SP232120, Thomas BR-240-120-LP, Solar Select 570-30SX, and CGE Gold Label 1782-40-EW are suspected to contain PCB. Ballast codes Advance REL 2P32-RH-TP, Advance R-2S-40-I-TP, Advance REL-2P32-SC, Philips R-2C-34-TPC, Philips RQM-2S40-TPC, R-2S40-I-TP, Ultra Save ST-232-120, Gold Label 1029-2STD, Advance RELB-2S40-SC, Gold Label 10292STD-BESC (New Electronic), Standard 10168STD, Valmiser 17A1024E, GE Gold Label 17A240E, Solo Saver 570-322, RQM-2S40-TPC, Howard Industries F2/327S-120, Robertson R120-P, and Magnetek 446-LR-TC-P are labelled as non-PCB containing ballasts. Due to the fixture being energized and height restrictions, verification of the date stamps and ballast codes could not be confirmed at all locations. Non-PCB ballasts are clearly marked on the label, and if not so marked, the ballast should be considered to be PCB containing. Once removed from service, all ballasts should be examined to determine PCB content and disposed of as per regulatory requirements.

6.5 HALOCARBONS

The most common building materials that contain halocarbons are air conditioning systems, refrigerators and fire extinguishing systems. Sixteen (16) window air conditioning units were visible to the technicians during the inspection. Twenty (20) refrigerators and four (4) water coolers were observed to have the potential to contain halocarbons. Roof top HVAC units were not inspected for halocarbons by OESN during this site investigation

6.6 SILICA

Concrete blocks and mortar contain silica. It should be assumed that all original concrete and mortar within the Building 52 at 52 North Star Drive contains silica. Silica dust will be created if concrete blocks or mortar are cut or otherwise disturbed. Such activities will create silica dust, and appropriate precautions (respiratory protection) should be taken.

6.7 THERMOSTATS AND FLUORESCENT LIGHT TUBES

Thermostats, thermometers, and light tubes generally contain small quantities of mercury. There were twenty-five (25) confirmed mercury-containing thermostats observed at time of inspection. There are several gauges and equipment within mechanical rooms and fan rooms that could potentially contain mercury, which were not visible to OESN technicians at the time of inspection. There are approximately four thousand nine hundred and ninety-one (4991) fluorescent tubes, one hundred and seventy-three (173) mercury vapour bulbs, and eleven (11) compact fluorescent bulbs which are known to contain mercury vapour. Storage of fluorescent tubes and mercury vapour bulbs was also observed at several locations. These items should be handled with care, and if removal is required, they should not be disposed of in a landfill site, but should be recycled by a material-recycling specialist. A detailed listing is identified within Appendix C – Functional space forms on location.

6.8 MOULD

A visual inspection of the facility did reveal potential mould growth and/or water damage/staining within multiple locations. The visual inspection revealed water damage on the ceiling tiles within the multiple office spaces, as indicated within Appendix C. During demolition / renovation or construction, should any mould-contaminated materials which were concealed during this site-inspection become visible, appropriate personal protective equipment should be worn while working inside the building. Health Canada guidelines (1995) indicate that the presence of visible mould growth and/or extensive water damage indoors requires remedial action regardless of whether the airborne mould spore load is determined.

6.9 ISOCYANATES

Building materials containing isocyanates were not observed to be present or stored during the site assessment.

6.10 VINYL CHLORIDE MONOMER

Vinyl chloride monomer was not observed during the site assessment.

6.11 BENZENE

Benzene may be present in various paints, coatings and adhesives within a building. It is however unlikely that benzene concentrations in air from renovation projects will exceed the regulated time-weighted average exposure value (TWAEV) for worker exposure of 0.5 parts benzene per million (ppm). Benzene may also be present within the outdoor diesel storage tanks.

6.12 ACRYLONITRILE

Acrylonitrile may be present in various paints and/ or adhesives within a building. It is however unlikely that acrylonitrile concentration in air from renovation projects will exceed the regulated time-weighted average exposure value (TWAEV) for worker exposure of 4.3 mg/m³ unless heat or extreme temperatures are applied.

6.13 COKE OVEN EMISSIONS

Coke oven emissions were not observed during the site assessment.

6.14 ETHYLENE OXIDE

Ethylene oxide was not observed during the site assessment.

7.0 RECOMMENDATIONS

7.1 ASBESTOS

Based on the asbestos containing materials identified during the assessment the following recommendations are required to be performed:

1. Three (3) insulated cement fittings on the DCW line within Functional Space 1001 – Canteen Room, require encapsulations. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
2. One (1) insulated cement fitting on the HWH return line within Functional Space 1001 – Canteen Room, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
3. One (1) insulated cement fitting on the Drain system within Functional Space 1009 – office, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
4. One (1) insulated cement fitting on the HWH supply line within Functional Space 1010 – SNAG Recovery Debrief Room Reception Desk, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
5. One (1) insulated cement fitting on the DHW line within Functional Space 1011 – Kitchen, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
6. One (1) insulated cement fitting on the HWH supply line within Functional Space 1013 – Office, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
7. Magblock pipe insulation (<1 LF) on the Steam system within Functional Space 1013 – Office, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

8. Encapsulation is required to enclose open ends of the Aircell pipe insulation on the DHW line within Functional Space 1013 – Office. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
9. One (1) insulated cement fitting on the DHW line within Functional Space 1013 – Office, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
10. Removal of 2 LF of parging material located on the North Wall on metal plate is required within Functional Space 1014 – Corridor. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
11. Magblock pipe insulation (<1 LF) on the HWH system within Functional Space 1018 – AS0 Office, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
12. Removal of one (1) insulated cement fitting on the DCW is required within Functional Space 1022A – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
13. Removal of insulated cement debris located at the North wall is required within Functional Space 1022A – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
14. Three (3) areas on the Boiler tank insulation within Functional Space 1025 – Mechanical Room requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
15. Three (3) areas on the Pressure Release tank insulation within Functional Space 1025 – Mechanical Room requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

16. Magblock pipe insulation on the HWH supply system requires encapsulation in three (3) areas within Functional Space 1025 – Mechanical Room requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
17. Magblock pipe insulation on the HPS system requires encapsulation in one (1) area within Functional Space 1025 – Mechanical Room requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
18. Magblock pipe insulation on the LPS system requires encapsulation to repair <1 LF of insulation within Functional Space 1025 – Mechanical Room requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
19. Canvas with Black Paper & Parging over Fibreglass (HVAC) has exposed ends that require encapsulation within Functional Space 1026 – Fan Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
20. Magblock pipe insulation on the HWH return line has exposed ends that require encapsulation within Functional Space 1026 – Fan Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
21. Magblock pipe insulation on the HWH supply line has exposed ends that require encapsulation within Functional Space 1026 – Fan Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
22. Magblock pipe insulation on the HPS line requires encapsulation to repair 3 LF within Functional Space 1026 – Fan Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
23. Aircell pipe insulation on the DHW line has exposed ends that require encapsulation within Functional Space 1026 – Fan Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

24. Cardboard with Black Paper on the DCW line has exposed ends that require encapsulation within Functional Space 1026 – Fan Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
25. Cardboard with Black Paper on the DCW line requires encapsulation within Functional Space 1030 – Aircraft & Supply Flight. One area is at the valve and the other exposed end is located at the west wall. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
26. Aircell pipe insulation on the DHW line has two exposed ends that require encapsulation within Functional Space 1030 – Aircraft & Supply Flight. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
27. One (1) insulated cement fitting on the DHW line within Functional Space 1030 – Aircraft & Supply Flight, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
28. One (1) insulated cement fitting on the HWH return line within Functional Space 1031 – Office, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
29. One (1) insulated cement fitting on the HWH supply line within Functional Space 1031 – Office, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
30. One (1) insulated cement fitting on the DCW line within Functional Space 1031 – Office, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
31. One (1) insulated cement fitting on the DCH line within Functional Space 1031 – Office, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

32. 8 LF of Magblock pipe insulation on the steam line requires encapsulation; as well as the removal of debris beneath the damage piping is required within Functional Space 1031 – Office. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
33. Two (2) insulated cement fittings on a disconnect line within Functional Space 1031 – Office, require encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
34. Magblock pipe insulation (1 LF) on the HWH supply line requires encapsulation; damaged area is located near the heater within Functional Space 1032 – Chief Warrnet Officer's Office. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
35. Magblock pipe insulation (1 LF) on the HWH return line requires encapsulation; damaged area is located near the heater within Functional Space 1034 – IT Department - Storage Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
36. Minor encapsulation is required to repair Magblock pipe insulation and insulated cement fittings on the HWH return within Functional Space 1035 – IT Help Desk. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
37. Minor encapsulation is required to repair the Magblock pipe insulation and insulated cement fittings on the HWH supply within Functional Space 1035 – IT Help Desk. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
38. Minor encapsulation is required to repair the Magblock pipe insulation and insulated cement fittings on the Steam line within Functional Space 1035 – IT Help Desk. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

39. Minor encapsulation is required to repair the Aircell pipe insulation and insulated cement fittings on the DHW within Functional Space 1035 – IT Help Desk. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
40. Minor encapsulation is required to repair the Cardboard with Black Paper pipe insulation and insulated cement fittings on the DCW within Functional Space 1035 – IT Help Desk. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
41. Magblock pipe insulation on the HWH supply line has exposed ends that require encapsulation within Functional Space 1037 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
42. Cardboard with Black Paper on the DCW has exposed ends that require encapsulation within Functional Space 1037 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
43. The Boiler tank insulation within Functional Space 1038 – Mechanical Room requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
44. The Pressure Release tank insulation within Functional Space 1038 – Mechanical Room requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
45. Magblock pipe insulation on the HWH return line requires encapsulation within Functional Space 1038 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
46. Magblock pipe insulation on the HPS line requires encapsulation within Functional Space 1038 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

47. Magblock pipe insulation and one (1) insulated cement fitting on the LPS line requires encapsulation within Functional Space 1038 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
48. Encapsulation is required to repair the fibreglass with parging cement on the HVAC duct insulation within Functional Space 1038 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
49. Transite wall panel requires several encapsulations within Functional Space 1039 – Fan Room. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.
50. Magblock pipe insulation on the HWH return line has exposed ends that require encapsulation within Functional Space 1039 – Fan Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
51. Magblock pipe insulation on the HPS line has exposed ends that require encapsulation within Functional Space 1039 – Fan Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
52. Aircell pipe insulation on the DHW line has exposed ends that require encapsulation within Functional Space 1039 – Fan Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
53. Cardboard with black paper pipe insulation on the DCW line has exposed ends that require encapsulation within Functional Space 1039 – Fan Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
54. Magblock pipe insulation on the HWH return line has exposed ends that require encapsulation near the heater within Functional Space 1040 – Battery Storage/ Charge Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

55. Three (3) insulated cement fittings on the HWH return line within Functional Space 1046 – Office, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
56. Three (3) insulated cement fittings on the HWH supply line within Functional Space 1046 – Office, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
57. Magblock pipe insulation on the HWH supply line requires encapsulation within Functional Space 1050 – HAZMAT Supplies Storage Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
58. Magblock pipe insulation on the HWH return line requires encapsulation within Functional Space 1050 – HAZMAT Supplies Storage Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
59. Magblock pipe insulation on the HPS line requires encapsulation within Functional Space 1050 – HAZMAT Supplies Storage Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
60. Magblock pipe insulation on the HWH supply line requires encapsulation within Functional Space 1051 –Storage. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
61. Magblock pipe insulation and insulated cement fittings on the HWH return line requires encapsulation within Functional Space 1051 –Storage. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
62. Magblock pipe insulation on the HPS line requires encapsulation within Functional Space 1051 –Storage. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

63. Aircell pipe insulation on the DHW line requires encapsulation at the shower within Functional Space 1053 – Women's Change Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
64. Exposed ends on the Cardboard with Black Paper on the DCW line requires encapsulation within Functional Space 1053 – Women's Change Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
65. Magblock pipe insulation on the HWH supply line requires encapsulation near the radiator within Functional Space 1055 – Women's Washroom. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
66. Magblock pipe insulation on the DHW requires encapsulation at the floor within Functional Space 1056 – Supply room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
67. Cardboard with Black Paper on the DCW line requires the removal of <1 LF at the east wall floor within Functional Space 1056 – Supply Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
68. One (1) insulated cement fitting on the HWH supply within Functional Space 1058 – Parachute Storage, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
69. Two (2) insulated cement fittings on the HWH return within Functional Space 1058 – Parachute Storage, require encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
70. Aircell pipe insulation on the DHW line requires encapsulation to enclose two ends within Functional Space 1059 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

71. Magblock pipe insulation on the LPS line requires encapsulation to enclose two ends within Functional Space 1059 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
72. One (1) insulated cement fitting on the LPS within Functional Space 1059 – Mechanical Room, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
73. Three (3) insulated cement fittings on the HPS within Functional Space 1059 – Mechanical Room, require removal. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
74. Magblock pipe insulation (6 LF) on the HPS requires removal within Functional Space 1059 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
75. Magblock pipe insulation (6 LF) on the HPS requires removal within Functional Space 1059 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
76. Magblock pipe insulation (1 LF) on the LPS requires encapsulation within Functional Space 1060 – Fan Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
77. Four (4) insulated cement fittings on the LPS within Functional Space 1060 – Fan Room, require encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
78. One (1) insulated cement fitting on the HWH supply within Functional Space 1061 – Supply Room, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

79. Exposed ends of the Cardboard with Black Paper on the DCW line require encapsulation within Functional Space 1062 – Storage/ Locker Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
80. One (1) insulated cement fitting on the HWH return within Functional Space 1065 – ALSE Supervisor, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
81. One (1) insulated cement fitting on the DHW within Functional Space 1065 – ALSE Supervisor, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
82. Magblock pipe insulation (1 LF) on the HWH return requires encapsulation within Functional Space 1068 – Telecomm Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
83. Two (2) exposed ends of the Magblock pipe insulation on the HPS requires encapsulation within Functional Space 1069 – Sprinkler Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
84. Removal of Magblock debris within Functional Space 1069 – Sprinkler Room is highly recommended. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
85. Three (3) areas of the Cardboard with Black Paper on the DCW line require encapsulation within Functional Space 1069 – Sprinkler Room. Each area is approximately 1 LF. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
86. One (1) insulated cement fitting on the DCW within Functional Space 1069 – Sprinkler Room, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

87. Aircell pipe insulation on the DHW line requires encapsulation to repair one (1) area within Functional Space 069 – Sprinkler Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
88. All four (4) insulated cement fittings on the HWH return line within Functional Space 1069 – Sprinkler Room, require encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
89. Magblock pipe insulation on the HWH supply requires encapsulation in one (1) area within Functional Space 1069 – Sprinkler Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
90. Magblock pipe insulation on the LPS requires encapsulation within Functional Space 1070 – Office - Metal Workshop. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
91. Magblock pipe insulation on the HWH supply requires encapsulation within Functional Space 1071 – Tool Crib. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
92. Five (5) insulated cement fittings on the HWH supply line within Functional Space 1071 – Tool Crib, require encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
93. Magblock pipe insulation on the HWH return requires encapsulation within Functional Space 1071 – Tool Crib. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
94. One (1) insulated cement fitting on the HPS within Functional Space 1071 – Tool Crib, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

95. Exposed ends of the Cardboard with Black Paper on the DCW line require encapsulation within Functional Space 1071 – Tool Crib. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
96. One (1) insulated cement fitting on the DCW within Functional Space 1071 – Tool Crib, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
97. One (1) insulated cement fitting on the DCW within Functional Space 1072 – Metal Workshop, requires encapsulation at the west wall. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
98. Magblock pipe insulation on the HWH supply requires encapsulation within Functional Space 1073 – Metal Shop to enclose the open ends of pipe. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
99. One (1) insulated cement fitting on the HWH supply within Functional Space 1073 – Metal Shop, requires encapsulation. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
100. Magblock pipe insulation on the HWH return requires encapsulation within Functional Space 1073 – Metal Shop to enclose the open ends of pipe. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
101. Magblock pipe insulation on the HPS requires encapsulation within Functional Space 1073 – Metal Shop to enclose the open ends of pipe. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
102. Exposed ends of the Aircell pipe insulation on the DHW line require encapsulation within Functional Space 1073 – Metal Shop. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

103. Magblock pipe insulation on the HWH return requires encapsulation within Functional Space 1074 – Lunch Room to enclose the open ends of pipe. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
104. One (1) insulated cement fitting on the HWH return requires encapsulation within Functional Space 1074 – Lunch Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
105. Magblock pipe insulation on the LPS requires encapsulation within Functional Space 1074 – Lunch Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
106. Insulated cement fittings on the LPS require encapsulation within Functional Space 1074 – Lunch Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
107. One (1) insulated cement fitting on the DCW requires encapsulation within Functional Space 1075 – Welding Shop. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
108. Magblock pipe insulation on the HPS requires encapsulation within Functional Space 1077 – Machine Shop/ Metal Workshop to enclose the open ends of the pipe. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
109. Cardboard with black paper pipe insulation on the DCW requires encapsulation within Functional Space 1077 – Machine Shop/ Metal Workshop to enclose the open ends of the pipe. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
110. Magblock pipe insulation on the LPS requires encapsulation within Functional Space 1077 – Machine Shop/ Metal Workshop to enclose the open ends of the pipe. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

- 111.3” Magblock pipe insulation on the HWH supply requires encapsulation within Functional Space 1077 – Machine Shop/ Metal Workshop to enclose the open ends of the pipe. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
- 112.3” Magblock pipe insulation on the HWH supply requires encapsulation within Functional Space 1077 – Machine Shop/ Metal Workshop to repair 2 LF of the pipe. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
- 113.8” Magblock pipe insulation on the HWH return requires encapsulation within Functional Space 1077 – Machine Shop/ Metal Workshop to enclose the open ends of the pipe. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
114. Magblock pipe insulation on the HPS requires encapsulation within Functional Space 1078 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
115. One (1) insulated cement fitting on the HPS requires encapsulation within Functional Space 1078 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
116. Cardboard with black paper pipe insulation on the DCW requires encapsulation within Functional Space 1078 – Mechanical Room to enclose the open ends of the pipe. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
- 117.3” Magblock pipe insulation on the HWH supply requires encapsulation within Functional Space 1078 – Mechanical Room to enclose the open ends of the pipe. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
- 118.3” Magblock pipe insulation on the HWH return requires encapsulation within Functional Space 1078 – Mechanical Room to enclose the open ends of the pipe. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

119. Magblock pipe insulation on the HPS requires encapsulation within Functional Space 1079 – Fan Room to enclose the exposed ends located at the north and south wall. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
120. Magblock pipe insulation on the LPS requires encapsulation within Functional Space 1079 – Fan Room to enclose the exposed ends located at the north and south wall. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
121. 8” Magblock pipe insulation on the HWH supply requires encapsulation within Functional Space 1079 – Fan Room to enclose the exposed ends located at the north and south wall. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
122. Magblock pipe insulation on the HWH return requires encapsulation within Functional Space 1079 – Fan Room to enclose the exposed ends located at the north and south wall. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
123. Three (3) insulated cement fittings on the HWH supply requires encapsulation within Functional Space 1083D – Main Corridor (Bays 3 & 4 to South Entrance). This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
124. One (1) insulated cement fitting on the HWH return requires encapsulation within Functional Space 1083D – Main Corridor (Bays 3 & 4 to South Entrance). This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
125. Magblock pipe insulation on the HPS requires encapsulation within Functional Space 1085 – Mechanical Room to repair the pipe in two (2) areas. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
126. Insulated cement fittings on the HPS requires encapsulation within Functional Space 1085 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

127. Cardboard with Black Paper pipe insulation on the DCW requires encapsulation in one (1) area near the east wall within Functional Space 1085 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
128. Aircell pipe insulation on the DHW requires encapsulation to enclose the exposed ends within Functional Space 1085 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
129. Magblock pipe insulation on the LPS requires encapsulation within Functional Space 1085 – Mechanical Room to repair the pipe in two (2) areas. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
130. Residual Magblock insulation on the LPS requires removal within Functional Space 1085 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
131. Magblock pipe insulation on the HWH supply requires encapsulation within Functional Space 1085 – Mechanical Room to repair the pipe in two (2) areas. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
132. Magblock pipe insulation on the HWH return requires encapsulation within Functional Space 1085 – Mechanical Room to repair the pipe in two (2) areas. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
133. Magblock pipe insulation on the HPS requires encapsulation in one (1) area near the north wall within Functional Space 1086 – Fan Room to repair the pipe in two (2) areas. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
134. Magblock pipe insulation on the HWH supply requires encapsulation to enclose the exposed pipe ends within Functional Space 1086 – Fan Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
135. Magblock pipe insulation on the HWH return requires encapsulation to enclose the exposed pipe ends within Functional Space 1086 – Fan Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

136. Transite wall panel requires minor encapsulation to enclose five (5) exposed areas within Functional Space 1087 – Supply & Aircraft Support Flight. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.
137. Magblock pipe insulation on the HPS requires encapsulation to enclose the exposed pipe ends within Functional Space 1087 – Supply & Aircraft Support Flight. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
138. Aircell pipe insulation on the DHW requires encapsulation to enclose the exposed pipe ends within Functional Space 1087 – Supply & Aircraft Support Flight. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
139. Magblock pipe insulation on the HWH supply requires encapsulation to enclose the exposed pipe ends within Functional Space 1087 – Supply & Aircraft Support Flight. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
140. One (1) insulated cement fittings on the HWH supply requires encapsulation within Functional Space 1087 – Supply & Aircraft Support Flight. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
141. Magblock pipe insulation on the HWH return requires encapsulation to enclose the exposed pipe ends within Functional Space 1087 – Supply & Aircraft Support Flight. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
142. One (1) insulated cement fitting on the HWH return requires encapsulation within Functional Space 1087 – Supply & Aircraft Support Flight. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
143. Parging cement on the Air line; approximately 2 LF requires removal within Functional Space 1087 – Supply & Aircraft Support Flight. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

144. Removal of transite panel debris is required within Functional Space 1089 – Office. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.
145. One (1) area of magblock pipe insulation on the HPS requires encapsulation within Functional Space 1094 – Lunch Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
146. One (1) insulated cement fitting on the HPS requires encapsulation within Functional Space 1094 – Lunch Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
147. One (1) area of magblock pipe insulation on the HWH supply requires encapsulation within Functional Space 1094 – Lunch Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
148. One (1) insulated cement fitting on the HWH supply requires encapsulation within Functional Space 1094 – Lunch Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
149. One (1) area of magblock pipe insulation on the HWH return requires encapsulation within Functional Space 1094 – Lunch Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
150. One (1) insulated cement fitting on the HWH return requires encapsulation within Functional Space 1094 – Lunch Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
151. One (1) insulated cement fitting on the DHW requires encapsulation within Functional Space 1094 – Lunch Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

152. One (1) insulated cement fitting on the DCW requires encapsulation within Functional Space 1094 – Lunch Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
153. Magblock pipe insulation on the HPS requires encapsulation to enclose the exposed pipe ends within Functional Space 1095 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
154. Magblock pipe insulation on the LPS requires encapsulation to enclose the exposed pipe ends within Functional Space 1095 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
155. Magblock pipe insulation on the HWH supply requires encapsulation to enclose the exposed pipe ends within Functional Space 1095 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
156. Magblock pipe insulation on the HWH return requires encapsulation to enclose the exposed pipe ends within Functional Space 1095 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
157. Cardboard with Black Paper pipe insulation on the DCW requires encapsulation to enclose the exposed pipe ends within Functional Space 1095 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
158. One (1) insulated cement fitting on the DCW requires encapsulation within Functional Space 1095 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
159. Removal of insulated cement debris is required within Functional Space 1095 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

160. The Pressure Release tank insulation requires encapsulation to repair damaged areas within Functional Space 1095 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
161. The Lower Tank, tank insulation requires encapsulation to repair damaged areas within Functional Space 1095 – Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
162. Transite wall panel requires minor encapsulation above the door within Functional Space 1096 – Fan Room. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.
163. Magblock pipe insulation on the HPS requires encapsulation to enclose the exposed pipe ends within Functional Space 1096 – Fan Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
164. Magblock pipe insulation on the LPS requires encapsulation to enclose the exposed pipe ends within Functional Space 1096 – Fan Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
165. Cardboard with Black Paper pipe insulation on the DCW requires encapsulation to enclose the exposed pipe ends within Functional Space 1096 – Fan Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
166. Magblock pipe insulation on the HWH supply requires encapsulation to enclose the exposed pipe ends within Functional Space 1097 – Lab Testing. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
167. Two (2) insulated cement fittings on the HWH supply require encapsulation within Functional Space 1097 – Lab Testing. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

168. Magblock pipe insulation on the HWH return requires encapsulation to enclose the exposed pipe ends within Functional Space 1097 – Lab Testing. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
169. Two (2) insulated cement fittings on the HWH return require encapsulation within Functional Space 1097 – Lab Testing. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
170. Cardboard with Black Paper pipe insulation on the DCW requires encapsulation to enclose the exposed pipe ends within Functional Space 1098 – Mechanical Power Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
171. One (1) insulated cement fitting on the HWH return requires encapsulation within Functional Space 1099 – Tool Crib. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
172. Transite wall panel requires minor encapsulation; approximately 1 SF within Functional Space 1101 – Office. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.
173. Cardboard with Black Paper pipe insulation on the DCW requires encapsulation to enclose the exposed pipe ends within Functional Space 1105 – Conference Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
174. One (1) insulated cement fitting on the DCW requires encapsulation within Functional Space 1105 – Conference Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
175. Aircell pipe insulation on the DHW requires encapsulation to repair approximately 1 LF of pipe within Functional Space 1105 – Conference Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

176. Magblock pipe insulation on the HWH supply requires encapsulation to enclose the exposed pipe ends within Functional Space 1118 – Test Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
177. One (1) insulated cement fitting on the HPS requires encapsulation within Functional Space 1118 – Test Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
178. Aircell pipe insulation on the DHW requires encapsulation in one (1) area to repair pipe within Functional Space 1118 – Test Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
179. One (1) insulated cement fitting on the DHW requires encapsulation within Functional Space 1118 – Test Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
180. Magblock pipe insulation on the HWH supply requires encapsulation throughout the entire line (22 LF) within Functional Space 1120 – Men's Washroom. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
181. One (1) insulated cement fitting on the HWH supply requires encapsulation within Functional Space 1120 – Men's Washroom. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
182. Magblock pipe insulation on the HWH return requires encapsulation throughout the entire line (22 LF) within Functional Space 1120 – Men's Washroom. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
183. Two (2) insulated cement fittings on the HWH return require encapsulation within Functional Space 1120 – Men's Washroom. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

184. Cardboard with Black Paper pipe insulation on the DCW requires encapsulation throughout the entire line (10 LF) within Functional Space 1120 – Men’s Washroom. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
185. Two (2) insulated cement fittings on the DCW require encapsulation within Functional Space 1120 – Men’s Washroom. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
186. Aircell pipe insulation on the DHW requires encapsulation throughout the entire line (10 LF) within Functional Space 1120 – Men’s Washroom. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
187. Two (2) insulated cement fittings on the DHW require encapsulation within Functional Space 1120 – Men’s Washroom. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
188. Asbestos-containing insulation debris is present in great quantities above the ceiling tiles within Functional Space 1120 – Men’s Washroom. Immediate removal and clean-up would be prudent. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
189. Magblock pipe insulation on the HWH supply requires encapsulation to enclose exposed ends within Functional Space 1122 – Entrance to Men’s Washroom. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
190. Magblock pipe insulation on the HWH return requires encapsulation to enclose exposed ends within Functional Space 1122 – Entrance to Men’s Washroom. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
191. Aircell pipe insulation on the DHW requires encapsulation to enclose exposed ends within Functional Space 1122 – Entrance to Men’s Washroom. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

192. Cardboard with Black Paper pipe insulation on the DCW requires encapsulation to enclose exposed ends within Functional Space 1122 – Entrance to Men's Washroom. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
193. One (1) insulated cement fitting on the HWH supply requires encapsulation within Functional Space 1123 – Men's Washroom. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
194. Magblock pipe insulation on the HWH return requires encapsulation to enclose exposed ends within Functional Space 1123 – Men's Washroom. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
195. One (1) insulated cement fitting on the HWH return requires encapsulation within Functional Space 1123 – Men's Washroom. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
196. Magblock pipe insulation on the HWH supply requires encapsulation to enclose exposed ends within Functional Space 1124 – Mechanical Room Entrance. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
197. Magblock pipe insulation on the HWH return requires encapsulation to enclose exposed ends within Functional Space 1124 – Mechanical Room Entrance. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
198. Aircell pipe insulation on the DHW requires encapsulation to enclose exposed ends within Functional Space 1124 – Mechanical Room Entrance. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
199. Aircell pipe insulation on the DHW requires encapsulation to repair 1 LF of piping near the hanger within Functional Space 1124 – Mechanical Room Entrance. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

200. Cardboard with Black Paper pipe insulation on the DCW requires encapsulation to enclose exposed ends within Functional Space 1124 – Mechanical Room Entrance. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
201. One (1) insulated cement fitting on the DCW requires encapsulation within Functional Space 1124 – Mechanical Room Entrance. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
202. Three (3) areas of Magblock pipe insulation on the HPS requires encapsulation within Functional Space 1124 – Mechanical Room Entrance. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
203. Five (5) areas of Magblock pipe insulation on the HPS requires encapsulation within Functional Space 1124 – Mechanical Room Entrance. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
204. Removal of asbestos-containing debris located beneath the Condensate tank is required. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
205. Magblock pipe insulation on the HWH supply requires encapsulation to enclose exposed ends within Functional Space 1125 – Fan Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
206. Magblock pipe insulation on the HWH return requires encapsulation to enclose exposed ends within Functional Space 1125 – Fan Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
207. Aircell pipe insulation on the DHW requires encapsulation to enclose exposed ends within Functional Space 1125 – Fan Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

208. Encapsulation is required to repair five (5) damaged transite ceiling tiles within Functional Space 1128 - Large Office Area; missing ceiling tiles shall be replaced with non asbestos-containing materials. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.
209. Magblock pipe insulation on the HWH supply requires encapsulation to enclose exposed ends within Functional Space 1128 - Large Office Area. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
210. Magblock pipe insulation on the HWH return requires encapsulation to enclose exposed ends within Functional Space 1128 - Large Office Area. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
211. One (1) insulated cement fitting on the drain line requires encapsulation within Functional Space 1128 - Large Office Area. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
212. Magblock pipe insulation on the HWH supply requires encapsulation to repair one (1) area of pipe within Functional Space 1135 - DCO ADJ. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
213. Magblock pipe insulation on the HWH supply requires encapsulation to repair one (1) area of pipe within Functional Space 1136 - AMCRO Office. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
214. Magblock pipe insulation on the HWH supply requires encapsulation to enclose exposed ends within Functional Space 1137 - Battery Shop E. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
215. Magblock pipe insulation on the HWH return requires encapsulation to enclose exposed ends within Functional Space 1137 - Battery Shop E. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

- 216.8” Magblock pipe insulation on the HWH supply requires encapsulation to enclose exposed ends within Functional Space 1138 - Battery Shop W. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
217. Magblock pipe insulation on the HWH return requires encapsulation to enclose exposed ends within Functional Space 1138 - Battery Shop W. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
218. One (1) insulated cement fitting on the HWH return requires encapsulation within Functional Space 1138 - Battery Shop W. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
219. Asbestos containing insulated cement debris located above ceiling tiles require removal within Functional Space 1138 - Battery Shop W. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
220. Magblock pipe insulation on the HWH supply requires encapsulation to enclose exposed ends within Functional Space 1139 - Battery Shop Office. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
221. Magblock pipe insulation on the HWH return requires encapsulation to enclose exposed ends within Functional Space 1139 - Battery Shop Office. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
222. Transite dot ceiling tiles require encapsulation to repair one (1) damaged panel within 2001 - Flight Planning / Training Room - 436 Squadron. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.
223. Transite dot ceiling tiles require encapsulation to repair one (1) damaged panel within 2002 - Standard Cell Office / Training Room - 436 Squadron. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.

224. Magblock pipe insulation on the Valve system requires encapsulation to repair 1 LF of insulation within Functional Space 2003 - Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
225. Transite wall panels require encapsulation to repair 1 SF of damaged panel within 2004A - Cashier's Office. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.
226. Minor encapsulation is required to repair damaged Transite dot ceiling tiles within 2006 - Computer Lab. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.
227. Transite wall panels require encapsulation to repair damage within 2011 - Mechanical Area. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.
228. Canvas with Parging Cement over Fibreglass on the HVAC duct insulation requires encapsulation to repair 1 SF of insulation within Functional Space 2037 - Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
229. Canvas with Parging Cement over Fibreglass debris requires removal and proper disposal within Functional Space 2037 - Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
230. Encapsulation is required to repair one (1) damaged area on the Hot Water tank insulation within Functional Space 2048 - Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

231. Canvas with Parging Cement over Fibreglass on the HVAC duct insulation requires encapsulation to repair five (5) areas of insulation within Functional Space 2048 - Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
232. Magblock pipe insulation on the LPS requires encapsulation to repair three (3) areas of insulation within Functional Space 2048 - Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
233. Magblock pipe insulation on the HWH return requires encapsulation to enclose the exposed ends near the floor within Functional Space 2048 - Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
234. One (1) insulated cement fitting on the HWH return requires encapsulation within Functional Space 2048 - Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
235. Magblock pipe insulation on the HWH supply requires encapsulation to enclose the exposed ends near the floor within Functional Space 2048 - Mechanical Room. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
236. Transite dot ceiling tiles require encapsulation to repair five (5) damaged panels within Functional Space 2050A - Office. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.
237. Transite dot ceiling tiles require encapsulation to repair several damaged panels within Functional Space 2050A - Office. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.

238. Ten (10) Transite dot ceiling tiles require removal within Functional Space 2050D - Office. Ceiling tiles shall be replaced with non asbestos-containing materials and should be performed as per O. Reg. 278/05.
239. Several Transite dot ceiling tiles require removal within Functional Space 2050E - Centre Vestibule. Ceiling tiles shall be replaced with non asbestos-containing materials and should be performed as per O. Reg. 278/05.
240. One (1) vibration gasket on the HVAC unit requires removal within Functional Space 2055 - Mechanical Room. The vibration gasket shall be replaced with non asbestos-containing materials and should be performed as per O. Reg. 278/05.
241. Transite dot ceiling tiles require encapsulation to repair several damaged panels within Functional Space 2057 - Telecomm Room. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.
242. One (1) Transite dot ceiling tile requires removal due to the severity of damage within Functional Space 2059 - Storage Room. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.
243. Transite dot ceiling tiles (216 SF) require removal due to the severity of damage within Functional Space 2059 - Storage Room. This activity should be performed as per O. Reg. 278/05 and be replaced with non asbestos-containing materials.
244. Three (3) Transite dot ceiling tiles require removal due to the severity of damage within Functional Space 2061 - Storage Room. This activity should be performed as per O. Reg. 278/05 and be replaced with non asbestos-containing materials.
245. Seven (7) Transite dot ceiling tiles require encapsulation within Functional Space 2061 - Storage Room. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.

246. Four (4) Transite dot ceiling tiles require removal due to the severity of damage within Functional Space 2062 - Storage Room. This activity should be performed as per O. Reg. 278/05 and be replaced with non asbestos-containing materials.
247. Asbestos-containing debris requires removal beside the HVAC unit. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
248. Three (3) insulated cement fittings on the DHW require encapsulation within Functional Space 2103A - Cleaners Closet. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
249. Transite dot ceiling tiles require encapsulation to repair several damaged panels within Functional Space 2109A - West Hallways - North End. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.
250. Transite wall panel requires encapsulation to repair damaged panels located near the fire door within Functional Space 2109B - West Hallways - Center Section. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.
251. Transite dot ceiling tiles require encapsulation to repair several damaged panels within Functional Space 2109B - West Hallways - Center Section. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.
252. Transite wall panel requires encapsulation to repair damaged panels located near the fire door within Functional Space 2109C - West Hallways - South End. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.

253. Transite dot ceiling tiles require minor encapsulation to repair damaged panels within Functional Space 2109C - West Hallways - South End. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.
254. Magblock pipe insulation on the HPS requires encapsulation at 1124 within Functional Space H001B - Hanger 1 Bay. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
255. 8” Magblock pipe insulation on the LPS requires encapsulation at 1124 within Functional Space H001B - Hanger 1 Bay. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
256. 8” Cardboard with Black Paper pipe insulation on the DCW requires encapsulation at 1124 within Functional Space H001B - Hanger 1 Bay. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
257. 8” Magblock pipe insulation on the HWH supply requires encapsulation at 1124 within Functional Space H001B - Hanger 1 Bay. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
258. 6” Magblock pipe insulation on the HWH return requires encapsulation at 1124 within Functional Space H001B - Hanger 1 Bay. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
259. Four (4) locations on the Cardboard with Black Paper pipe insulation on the DCW require encapsulation within Functional Space H001 - Aircraft Hanger 1. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
260. One (1) insulated cement fitting on the DCW requires encapsulation within Functional Space H001 - Aircraft Hanger 1. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

261. Magblock pipe insulation on the HPS requires encapsulation to enclose the exposed ends within Functional Space H002B - Hanger 2 Bay. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
262. Aircell pipe insulation on the DHW requires encapsulation to enclose the exposed ends within Functional Space H002B - Hanger 2 Bay. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
263. Magblock pipe insulation on the HWH supply requires encapsulation to enclose the exposed ends within Functional Space H002B - Hanger 2 Bay. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
264. Magblock pipe insulation on the HWH return requires encapsulation to enclose the exposed ends within Functional Space H002B - Hanger 2 Bay. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
265. 3” Magblock pipe insulation on the LPS requires encapsulation to enclose the exposed ends within Functional Space H004B - Hanger 4 Bay. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
266. Aircell pipe insulation on the DHW requires encapsulation to enclose the exposed ends within Functional Space H004B - Hanger 4 Bay. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
267. One (1) insulated cement fitting on the DHW requires within Functional Space H004B - Hanger 4 Bay. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
268. Magblock pipe insulation on the HWH supply requires encapsulation to enclose the exposed ends within Functional Space H004B - Hanger 4 Bay. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.

269. Magblock pipe insulation on the HWH return requires encapsulation to enclose the exposed ends within Functional Space H004B - Hanger 4 Bay. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
270. Three (3) areas of the Cardboard with Black Paper pipe insulation on the DCW requires encapsulation within Functional Space H004 - Aircraft Hanger 4. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
271. Three (3) areas; (approximately 1 LF each area) of the Cardboard with Black Paper pipe insulation on the DCW requires encapsulation within Functional Space M003A - Mezzanine above Hanger 3 - Common Area. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
272. One insulated cement fitting on the DCW requires encapsulation within Functional Space M003C - Mezzanine above Hanger 3 - Common Area. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
273. Transite sheeting requires encapsulation to repair 1 SF of damaged panel within E002 - Exterior Storage Room - South Side. This activity should be performed under Type 1 Operations, as per O. Reg. 278/05.
274. Cardboard with Black Paper pipe insulation requires removal; approximately 6 LF is present within E002 - Exterior Storage Room - South Side. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
275. Two insulated cement fittings require removal within E002 - Exterior Storage Room - South Side. This activity should be performed under Type 2 Operations, as per O. Reg. 278/05.
276. Approximately twenty panels of transite are stored within R001 - Roof Top Storage Room; these tiles should be disposed of as asbestos waste.

277. All other friable and non-friable asbestos materials (not listed above) observed throughout Building 52 (Hanger 10) located at 52 North Star Drive were in good condition and do not pose a threat unless disturbed so as to alter the structural integrity of the material. Prior to renovation or demolition work, any asbestos-containing materials that may be disturbed during renovation activities should be removed as per O. Reg. 278/05
278. Should a material that is obstructed from view or hidden behind a wall or ceiling be detected during renovation / demolition, the material should be tested in order to determine if it is asbestos containing
279. Based on project need, bulk sample testing of materials considered to be suspect of containing asbestos will be required. An invasive sampling strategy will need to be conducted based on project plans

7.2 LEAD-BASED PAINT

Maroon, Brown, Forest Green, Chocolate Brown, Pale Mint Green, Beige and Army Grey were not tested to preserve the cosmetic integrity of the painted surfaces. Further testing of these paint coatings may be required. Should renovation work require the disturbance of lead based paint, the following is recommended:

- A. The abatement procedures/ maintenance activities performed on surfaces with lead-based paint should be conducted in accordance with the Lead on Construction Projects Guideline (MOL, September 2004).
- B. Corrective action or maintenance performed on surfaces with lead coatings should be performed in such a manner to avoid the generation of dust and airborne particulates.
- C. Should renovation / demolition of building materials coated with lead based paint be part of the scope of work, TCLP analyses should be performed on these coatings prior to disposal. Additional testing of the product should be performed when being disposed of to capture an accurate quantification of the material to

determine appropriate waste stream identification. This is representative of the building material and not just the coating.

7.3 MERCURY- AND ARSENIC -CONTAINING PAINT

Should renovation work require the disturbance of mercury or arsenic containing paint, the following is recommended:

- A. Avoid activities that will result in the generation of dust and airborne particulates.
- B. Ensure employees are provided with appropriate respiratory protection.

7.4 LIGHT BALLASTS

There are numerous fluorescent light ballasts located throughout the 52 North Star Drive facility. Non-PCB ballasts are clearly marked on the label, and if not so marked, the ballasts should be considered to be PCB containing:

- A. Remove using PCB handling procedures (Environment Canada publication *“Identification of Lamp Ballasts Containing PCBs”*, 1991).
- B. If more than 39 confirmed and suspected PCB containing ballasts are to be removed at one time, they must be handled and disposed/recycled as PCB waste as per Ontario Regulation 362.
- C. The preferred management alternative involves having the ballasts recycled by a company specializing in the recycling of PCB waste.
- D. Transformers suspected of containing PCBs are to be handled and disposed/recycled as PCB waste as per Ontario Regulation 362.

7.5 HALOCARBONS

Any air conditioning units and refrigeration units (or other equipment containing halocarbons) are to be decommissioned by a certified service agent.

7.6 SILICA

Concrete, concrete block, cement, mortar and brick should be assumed to contain silica. Based on this, the following is recommended for Building 52.

- A. Renovation activities that may disturb silica containing building materials or generate dust should be conducted as per the Silica on Construction Projects Guideline (MOL, September 2004).

- B. Engineering controls, work practices and hygiene practices should be implemented so as to prevent generation of airborne dust.
- C. Should it be necessary to drill holes through concrete surfaces for renovation activities, this activity should be considered a Type 1 Silica operation (as per Silica on Construction Projects Guideline, MOL 2004).

7.7 THERMOSTATS AND FLUORESCENT LIGHT TUBES

Fluorescent light tubes and some thermostats generally contain small quantities of mercury. These items should be handled with care, and if removed should be disposed/recycled as mercury containing material. The preferred management alternative involves having the tubes recycled by a company specializing in the recycling of mercury-containing waste.

7.8 MOULD

Potential biological contaminants were observed during the site survey. During renovation, should any mould-contaminated materials, which were concealed during this site-inspection, become visible, appropriate personal protective equipment should be worn while working inside the building.

- A. If mould-contaminated materials are discovered through renovation/demolition work and are to be disturbed, all personnel working inside Building 52 should wear appropriate protective equipment that includes (but is not limited to): N-95 Respirator, Eye goggles and gloves.
- B. Persons having undergone recent surgery, immune suppressed people or people with chronic inflammatory lung disease (e.g. asthma, hypersensitivity pneumonitis and severe allergies) can be more susceptible to the development of health symptoms following fungal exposure and should not be present during remediation.
- C. Remediation should be conducted using protocols consistent with Canadian Construction Associations document entitled “Mould Guidelines for the Canadian Construction Industry”.

8.0 CLOSING STATEMENT

The information presented herein is based on observations and laboratory testing of samples collected from building materials at the time of the assessment within Building 52 located at 52 North Star Drive. Non-invasive inspection and sampling methodology was designed to produce comprehensive results whereby all materials within the building are represented in report findings. However, it is possible that building materials not sampled and identified in this report will become exposed during extensive interior hand demolition of floors, walls, and/or ceilings. Any materials that are encountered that are not identified in this report, and are suspected to be asbestos, lead, or mercury containing or otherwise hazardous, should be treated as hazardous until sampling and analysis proves otherwise. Since the examination of all fluorescent light ballasts and transformers were not possible due to live power and height restrictions, all ballasts and transformers have the potential of containing PCBs until otherwise proven.

9.0 LIMITATIONS

This survey report is based on information that was collected during the designated substance hazardous materials survey site inspection conducted at Building 52 located at 52 North Star Drive, 8-WING CFB Trenton, ON for CE Contracts. The inventories of hazardous materials (i.e., ACMs, lead etc.) contained in this report are not exhaustive, but are provided to advise CE Contracts of the presence and distribution of certain designated substances and hazardous materials, and represent materials that were visible and accessible to the inspector at the time of site inspection.

With respect to suspected asbestos containing materials (ACMs) and lead based paints, non-invasive inspection and sampling methodology was designed to produce comprehensive results whereby all materials within the building are represented in report findings. However, it is possible that building materials not sampled and identified in this report will become exposed during regular activities and or future maintenance/renovation project. Roofing materials, glazed concrete block mortar, ceramic tile mortar, caulking and gasket materials were not always assessed to avoid compromising the integrity of the products. These materials should be suspected of containing asbestos until otherwise determined analytically. Any thermal or mechanical materials housed within wall cavity spaces were not included in the assessment. Access above solid transite ceilings was limited and it is possible for thermal or mechanical materials to be housed within ceiling cavity spaces. The identification and location of vermiculite insulation inside concrete block cavity spaces could not be adequately assessed.

It should be recognized that although construction materials tend to remain consistent throughout a building structure, anomalies, which would not be identified by this study, could occur. Care must therefore, be taken during demolition, renovation, or asbestos removal activities to gain access to previously inaccessible areas and confirm that samples of ACM tested in this inventory are indeed representative of ACMs (if present) in the area of concern. Specifically, the drain line pipe insulation could not be reached within the Aircraft Hangers due to height restrictions. It is assumed to be the same pipe insulation as different accessible locations within the building.

There is no warranty expressed or implied by Ontario Environmental & Safety Network Ltd. that the inspection uncovered all hazardous materials or environmental liabilities at 52 North Star Drive – Hanger 10 facility. Ontario Environmental & Safety Network Ltd. believes, however, that the level of detail carried out for the designated substance/hazardous materials survey was appropriate to meet the study objectives. To the best of Ontario Environmental & Safety Network Ltd. knowledge, this report is accurate; however, Ontario Environmental & Safety Network Ltd cannot guarantee the completeness or accuracy of information supplied by third parties.

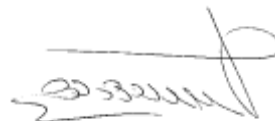
This Hazmat Survey was prepared for the sole use of CE Contracts and their professional representatives or advisors. Any use of this report, or any reliance on or decision based on it, by another party is the responsibility of such third party. OESN Ltd. accepts no responsibility for losses or damages which may be suffered by a third party as a result of decisions made or actions based on this report. OESN Ltd. is an environmental consulting firm and is not licensed to practice law. Therefore, this report should not be interpreted as providing legal advice or interpretations.

If there are any questions, please feel free to contact our office at your earliest convenience.

Respectfully submitted,



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**TARGETED PRE-RENOVATION
DESIGNATED SUBSTANCE AND HAZARDOUS MATERIALS SURVEY
CFB TRENTON
BUILDING B052 HANGAR 10 ROOF
8 WING
ASTRA, ONTARIO**

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5 November, 2018

**Project No. SWC169197 Rev.4
DCC Project No. TR692990 - 62588**

Distribution:

- Client – 1 Electronic Copy; and,
- Wood Environment & Infrastructure Solutions - 1 Copy

EXECUTIVE SUMMARY

Wood Environment & Infrastructure, a Division of Wood Canada Limited (Wood), was retained by Defence Construction Canada (DCC or the Client) to conduct a targeted pre-renovation Designated Substance and Hazardous Materials Survey (DSHMS) of the roof of Building B052 Hangar 10 (Area of Work) located at CFB Trenton, Astra, Ontario (Site). The targeted DSHMS was performed for DCC Project No.: TR692990 / Contract No. 62588 under the terms and conditions of DCC Ontario Regional Source List No. OR14SL02.

The objective of the targeted DSHMS was to identify and quantify where reasonably possible within the context of the scope of work, building materials containing designated substances and/or selected hazardous building materials associated with the roof (i.e., Area of Work) as required by Section 30 of Ontario's Occupational Health Safety and Safety Act (OHSA).

Wood understands that the purpose of the survey is to support renovation activities by contractors. This survey is intended for pre-renovation purposes within the Area of Work only and may not provide sufficient detail for long-term management of asbestos-containing materials (ACM) that may be present in the Area of Work as required in Section 8 (3) of Ontario Regulation 278/05 (as amended) *Designated Substance – Asbestos On Construction Projects And In Buildings And Repair Operations* (O. Reg. 278/05).

Findings

The targeted pre-renovation DSHMS of the specified Area of Work completed for the roof of the Building B052 Hangar 10 at the CFB Trenton (Area of Work), Astra, Ontario in general accordance with the DCC SOW and Wood's Proposal No. PSWL169271.

Based on the visual inspection of accessible areas in the Area of Work and laboratory bulk sample results, the following Designated Substances and Hazardous Materials were identified in the Area of Work:

Asbestos-Containing Materials (ACMs)

- Brown roofing shingle material was found to contain 7% chrysotile asbestos (~16,815 square meters). The brown roofing shingle is considered a non-friable material.

- Transite was found to contain 40% amosite asbestos (~1,175 square meters). The transite is considered a non-friable material.

Lead

- One (1) bulk sample of paint was collected and submitted for lead analysis. The paint sample was found to contain 0.107% by dry weight.

Mercury

- One (1) bulk sample of paint were collected and submitted for analysis of mercury content. The sample was found to contain 0.0000491% by weight, which is below 0.001% by dry weight, which is the limit utilized by Wood for the purposes of this report.

Arsenic

- One (1) bulk sample of paint was collected and submitted for analysis for arsenic content. The sample submitted for analysis was found to be below the analytical detection limit.

Silica

- Given the common presence of silica, crystalline silica may be present in the granular (stone or sand) component of the roofing materials within the Area of Work.

Polychlorinated biphenyl (PCB)

- Wood collected and submitted seven (7) samples of caulking/roofing materials for analysis for PCB analysis. Laboratory analysis was performed under analytical method SW-846 8082. All samples were found to be below the Regulatory Limit of 50 ppm for solids as outlined in Section 2.2.1 of the EPA PCB regulation.

- One (1) bulk sample of paint were collected and submitted for analysis of chromium content. The sample was found to contain 0.0267% by weight.

Toxicity Characteristic Leaching Procedure (TCLP)

The bulk paint sample that was found to have detectable levels of metals (lead, mercury, and chromium) was submitted for TCLP analysis for comparison against Schedule 4 Criteria of Ontario Regulation 347/90 (as amended) – “General – Waste Management” (O. Reg. 347/90). Results indicate that the paint submitted for analysis was above the Schedule 4 criteria for lead and therefore considered to be hazardous waste.

Recommendations

The following recommendations are provided based on the findings of the targeted pre-renovation DSHMS of the Area of Work:

- No short-term remedial work/abatement is required at this time;
- Long-term recommendations to support renovations of the Area of Work are summarized in Section 6 of this report.

This executive summary is **not** to be used alone and the report must be reviewed in its entirety. Should you have any questions or comments regarding this assessment, please do not hesitate to contact our office.

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Appendix B	Laboratory Certificates of Analysis
Appendix C	Limitations



1.0 INTRODUCTION

1.1 PURPOSE

Wood Environment & Infrastructure, a Division of Wood Canada Limited (Wood), was retained by Defence Construction Canada (DCC or the Client) to conduct a targeted pre-renovation Designated Substance and Hazardous Materials Survey (DSHMS) of the roof of Building B052 Hangar 10 (Area of Work) located at CFB Trenton, Astra, Ontario (Site). The targeted DSHMS was performed for DCC Project No.: TR692990 / Contract No. 62588 under the terms and conditions of DCC Ontario Regional Source List No. OR14SL02.

The objective of the targeted DSHMS was to identify and quantify where reasonably possible within the context of the scope of work, building materials containing designated substances and/or selected hazardous building materials associated with the roof (i.e., Area of Work) as required by Section 30 of Ontario's Occupational Health Safety and Safety Act (OHSA).

Wood understands that the purpose of the survey is to support renovation activities by contractors. This survey is intended for pre-renovation purposes within the Area of Work only and may not provide sufficient detail for long-term management of asbestos-containing materials (ACM) that may be present in the Area of Work as required in Section 8 (3) of Ontario Regulation 278/05 (as amended) *Designated Substance – Asbestos On Construction Projects And In Buildings And Repair Operations* (O. Reg. 278/05).

1.2 SCOPE OF WORK

The targeted pre-renovation DSHMS was performed in general accordance with Wood's Proposal No. PSWL169271- Phase 4 Rev. 1 (Change Order 03) dated 23 March 2018. The scope of work included the following activities:

- Performed a review of previous hazardous materials or designated substances sampling reports, abatement records, and building construction plans where made available by the Client prior to conducting the survey;
- Conducted a visual survey of existing roofing systems and other equipment located on the roof (Areas of Work) that are anticipated to be affected by the planned roofing

replacement to identify suspected designated substance and targeted Hazardous Materials as discussed in this report;

- o The survey determined the presence and extent (affected material types and estimated quantities where reasonable within the context of the project scope and budget) of designated substances or select hazardous materials in accessible building materials, including condition of asbestos, lead, mercury, arsenic and PCB containing materials and whether the confirmed ACM are friable or non-friable.
- The survey was performed in accordance with the safety considerations and constraints as indicated in the DCC SOW;
- Digital photographs were taken of the commonly identified or sampled building materials that contain or are suspected of containing designated substance or hazardous materials as identified in this report;
- Collected bulk samples from accessible areas of the roof of suspected ACM; paint for lead, mercury and arsenic; roofing materials potentially containing PCBs; and, submitted to an accredited laboratory for analysis (type and quantity of asbestos; total concentration of lead, mercury and arsenic in paint; and, total PCBs content);
- Prepared this draft DSHMS report for DCC review and a subsequent final report that will include a description of sampling and analytical methods, interpretation of the laboratory analytical results, locations and estimated visual quantities of materials (wherever possible) that require removal and special handling prior to renovation activities, and recommendations for the appropriate abatement and disposal of the identified designated materials.
 - o Roof plan drawing for the building with testing locations also included.

Wood provided the above services using its commercially reasonable best efforts consistent with the level and skill ordinarily exercised by members of the profession currently practicing under similar conditions. The survey was carried out as per current industry standards in Ontario and in accordance with current Provincial regulations. This DSHMS report meets the employers

due diligence requirements as generally outlined in Section 30 of the OHSA and identifies materials in the Areas of Work that must be removed prior to renovations.

2.0 REGULATORY REQUIREMENTS AND GUIDELINES

2.1 DESIGNATED SUBSTANCES

"Designated Substance" as defined by the OHSA means *"a biological, chemical or physical agent or combination thereof prescribed as a designated substance to which the exposure of a worker is prohibited, regulated, restricted, limited or controlled."* The OHSA has issued specific regulations under Section 30 of the Act for these substances. Ontario Regulation 490/09 (as amended) - *Designated Substances* (O. Reg. 490/09) provides guidance on exposure and medical monitoring, permissible occupational exposure limits, etc.

There are eleven (11) designated substances defined by the OHSA which are regulated in the work place by O. Reg. 490/09. During manufacturing processes and work within a workplace, hygiene air monitoring could be performed to assess worker exposure levels in accordance with O. Reg. 490/09. For the purpose of the survey and this report, designated substances are defined as those containing the following substances: arsenic, asbestos, lead, mercury, and silica (free crystalline). The following designated substances are not typically found in building materials in a composition or state that are in a hazardous form for worker exposure during general renovation and / or demolition activities and therefore, these materials were not addressed in this survey: acrylonitrile, benzene, coke oven emissions, ethylene oxide, isocyanates, and vinyl chloride (monomer).

The Ontario Ministry of Labour (MOL) issued a specific regulation and / or guidelines associated with construction related activities for only three (3) of the eleven designated substances, including asbestos, lead, and silica. The remaining eight (8) designated substances are regulated by O. Reg. 490/09.

2.1.1 ARSENIC

Arsenic compounds are used as wood preservatives (e.g., pressure-treated wood), insecticides, herbicides, and in metal alloys and are naturally present in certain minerals and soils. Arsenic

has been known to be used as a paint pigment. Although the OHSA does not regulate the use of arsenic in paint, safety precautions must be taken to prevent arsenic-containing particulate from becoming airborne during demolition or renovation projects. In any case, worker exposure to arsenic must be kept below 0.01 mg/m^3 (STEL – 0.05 mg/m^3) as per O. Reg. 490/09.

mg/m^3 – milligrams per cubic meter of air

STEL – Short Term Exposure Limit

2.1.2 ASBESTOS

Asbestos is the name used for a group of fibrous minerals that occur naturally in soil and rock. There are over 3,000 products that may have contained asbestos, such as roofing shingles, ceiling tiles, floor tiles, asbestos cement products, gaskets, insulation, paper products, and other building and insulating products. ACM is divided into the following two broad categories:

- **Friable ACM:** materials that, (a) when dry, can be crumbled, pulverized or powdered by hand pressure, or (b) is crumbled, pulverized or powdered (as defined by O. Reg. 278/05). Typical friable materials include mechanical/thermal insulation, acoustical or decorative spray applications and fireproofing. ACM that is friable has a much greater potential than non-friable ACM to release airborne asbestos fibres when disturbed.
- **Non-friable ACM:** hard or manufactured products wherein the asbestos fibres are bound. Typical non-friable ACM includes tar/sealants, vinyl flooring, pre-formed manufactured cement products (e.g., piping, wallboard and siding). Though many ACM products are considered non-friable when intact, they can become friable during demolition or renovation activities.
- **Special considerations:** Some ACMs, such as plaster, compressed fibre ceiling tiles and drywall compound are considered non-friable materials when in-place and in good condition as the associated binding agents prevents the release of airborne fibres. These materials are non-friable in place, but can generate dust upon disturbance/removal. These materials are referred to as potentially friable materials (or miscellaneous friable materials). Therefore, these materials can be handled as a non-friable if in good

condition and undisturbed. However, the binding agent can be relatively weak, and if disturbed or damage in any way, the material may act as a friable material with an increased risk of asbestos fibre release. These materials must be handled as friable materials in the event of any disturbance or damage. Drywall joint compound is a non-friable building material; however, due to general dust release and generation during removal, additional abatement control measures as regulated by O. Reg. 278/05 may be required. It is generally recommended that a competent asbestos professional be consulted and a site specific program be developed prior to any major disturbance.

- **Vermiculite insulation** is an unconsolidated material and asbestos fibres may not be uniformly distributed in the material. As such, the standard Phase Light Microscopy (PLM) analytical method is not recommended for quantification and is used solely to determine the presence or absence of asbestos. Any observation of asbestos in the sample is reported as positive for asbestos, or negative (non-detect) if not observed.

The handling, identification, documentation, and removal of ACM are regulated by O. Reg. 278/05. ACM is defined by O. Reg. 278/05 as being a material that contains 0.5 percent or more asbestos by dry weight. As described in Section 8 of O. Reg. 278/05, a record of ACM must be developed as part of on-going asbestos management in buildings. The record of ACM includes, but is not limited to the location and condition of ACM and whether it is considered friable or non-friable. In any case, worker exposure to asbestos must be kept below 0.1 f/cc as per O. Reg. 490/09.

f/cc – fibres per cubic centimeter of air

2.1.3 LEAD

In building construction, lead was frequently used for roofs, cornices, tank linings, electrical conduits, as a main component of soft solder ally used to seal pipe joints and in caulking, ceramic glazing and other such materials. Lead was also used extensively for pigmentation, sealing, and as a drying agent in oil based paints up until the early 1950s. Exterior paints typically contained up to 60% lead by weight.

The MOL issued the "*Lead on Construction Projects*" guideline in September 2004 (updated April 2011). The guideline includes legal requirements, health effects, control of the health hazard, classification of construction operations, and measures and procedures for working with the designated substance during operations that create lead dust or fumes.

The OHSA does not set a regulatory limit on the concentration of lead in paint and based on discussions with the MOL, any concentration of lead in paint applications should be considered to be lead-containing. For this report, all paints with a lead concentration greater than the laboratory RDL (Reliable Detection Limit) for the analytical test method have been discussed.

Materials with content of lead in any concentration may require special handling procedures and worker protection. In any case, worker exposure to lead must be kept below 0.05 mg/m³ as per O. Reg. 490/09.

Certain paints (as noted within this report) were determined to contain elevated concentrations of lead, mercury, arsenic, and chromium were subsequently submitted to an accredited laboratory for Toxicity Characteristic Leaching Procedure (TCLP) analysis to provide guidance in categorizing the resulting waste as hazardous or non-hazardous for disposal purposes.

The leachate samples were sent to Caduceon Environmental Laboratories for analysis. Samples were submitted for Schedule 4 TCLP testing (lead) under Ontario Regulation 347/90 (as amended) – "General – Waste Management Regulation" (O. Reg. 347/90).

2.1.4 MERCURY

Mercury can be used in fluorescent, compact fluorescent and high intensity discharge (HID) lamps, electrical switches, thermostats, thermometers, and batteries. All fluorescent and compact fluorescent lights contain mercury regardless of the date of manufacture.

The Canadian Council of Ministers of the Environment (CCME) "*Canada-Wide Standard for Mercury-Containing Lamps*" (2001) is largely geared towards reducing the amount of mercury in lamps at the manufacturing stage; however, they do recommend that the release of mercury can be minimized through the proper recycling and disposal of mercury-containing lamps.

Mercury was also commonly added to paints as a fungal retardant.



In January 1991, under the voluntary industry program negotiated by Health Canada, the intentional addition of mercury to Canadian produced consumer paints for interior use ceased. Under the Federal Surface Coating Materials Regulations (SOR/2005-109), the maximum total mercury concentration of paints and other surface coatings is restricted to 10 mg/kg (0.001%) when a dried sample is tested in accordance with a method that conforms to good laboratory practices.

For the purposes of this survey, Wood defines mercury-containing paint (MCP) as a surface coating containing greater than 0.001% mercury by dry weight. In any case, worker exposure to mercury must be kept below 0.025 mg/m³ as per O. Reg. 490/09.

2.1.5 SILICA

Silica is used in the manufacture of glass, ceramics, abrasives, water treatment products and filtration systems. Crystalline silica is also used in the production of concrete or mortar-based building materials, cement, acoustic ceiling tiles, and ceramic tiles which are used for construction purposes. Common construction sand contains crystalline silica and is present in ceiling tiles, concrete products, mortar, and brick and while in lower concentrations, possibly plaster, drywall joint compound and roofing materials. Exposure to crystalline silica commonly occurs during drilling, cutting or grinding of concrete, masonry or similar products.

The MOL issued the "Silica on Construction Projects" guideline in September 2004. The guideline includes legal requirements, health effects, control of the health hazard, classification of construction operations, and measures and procedures for working with silica and silica-containing building materials during operations that create silica dust.

2.2 HAZARDOUS BUILDING MATERIALS

2.2.1 POLYCHLORINATED BIPHENYLS (PCBs)

PCB-containing products were manufactured for use in applications where stable, fire-resistant, and heat-transfer properties were demanded between 1926-29 and 1977. Most PCBs were sold for use as dielectric fluids (insulating liquids) in electric transformers and capacitors. Other uses included heat transfer fluid, hydraulic fluid, dye carriers in carbonless copy paper, plasticizers in

paints, adhesives, and caulking compounds. In Canada, PCBs were prohibited from being used in products, equipment, machinery, electrical transformers and capacitors that were manufactured or imported into the country after July 1980. However, older equipment in use after this date may still contain PCBs if the equipment's fluid has not been changed, or if there was sufficient inventory of such equipment.

PCBs are also regulated under the Federal Canadian Environmental Protection Act (EPA), 1999, PCB Regulation SOR/2008-273 which came into force September 2008 and subsequent amendment regulation SOR 2010-57. The Federal PCB regulations generally establish deadlines for ending the use and long term storage of PCBs and products containing PCBs. PCB-containing equipment or any PCB-containing substance with a PCB concentration at or in excess of 2 parts per million (ppm) for liquids and 50 ppm for solids are subject to the above Federal regulations.

This survey is intended for pre-renovation purposes only, and may not provide sufficient detail for long term management of PCBs or to determine end-of-use inventories as required in SOR/2008-273-PCB Regulation.

2.2.2 CHROMIUM

Chromium compounds are added to paints and primers to provide corrosion protection and reflective properties. Although the OHSA does not specifically regulate the use of chromium in paint, safety precautions must be taken to prevent chromium-containing particulate from becoming airborne during demolition or renovation projects. In any case, worker exposure to chromium must be kept below 0.5 mg/m³ as per O. Reg. 833/90 (as amended) – "*Control of Exposure to Biological or Chemical Agents*" (O. Reg. 833/90).

3.0 SURVEY CRITERIA AND METHODOLOGY

3.1 PREVIOUS WORK AND REPORTS

Wood reviewed the following documents:

- Amec Foster Wheeler report titled *“Designated Substances and Hazardous Building Materials Survey, Building 052, Hangar Roof, CFB Trenton, Ontario”* dated 13 September 2017

3.2 METHODOLOGY

This targeted pre-renovation DSHMS was limited to a survey of readily accessible and known areas in the Area of Work as defined by the DCC SOW (refer to Section 1.2 and Figure 1 of this report).

Suspected designated substances and specific hazardous materials included in this report were visually identified by appearance, age, and knowledge of current and historical uses of building materials. Information was recorded where suspected designated substances and hazardous materials included in this survey were observed, including: friability and condition of ACM, approximate visual estimates of quantities where possible within the confines of the scope of work, locations, sample information, and sample locations.

The survey was limited to accessible areas in the Area of Work. Accessible locations include only those entries not prohibited by security or other restrictions and did not present an unacceptable health or safety risk to the surveyor. Reasonable effort was used to identify potential designated substances and/or hazardous materials in areas not readily accessible. Bulk sampling and analysis may not have been performed for materials that were not accessible without substantial damage to building components.

The survey excluded materials located outside the Area of Work (e.g., any interior rooms), underground equipment and materials (e.g., drums, vessels, underground storage tanks, pipes).

The storage room in the middle of the lower courtyard roof area of B052 was not sampled.

3.3 ASBESTOS

The survey included a detailed description of suspected ACM identified in accessible locations of the roof (Area of Work). Details of location, type of building material, friability, a visual estimate of quantity where possible, condition, and accessibility were recorded.

Bulk samples of suspected ACM were collected in sample sets in compliance with the requirements of O. Reg. 278/05. Table 1 of O. Reg. 278/05 indicates the minimum number of samples to be collected and analyzed (1, 3, 5, or 7 depending on quantity, application and friability) from each homogeneous material, in order for the material to be considered non-asbestos. All samples collected and analyzed from a homogeneous material must be determined to be non-asbestos containing as per O. Reg. 278/05 for that material to be considered a non ACM. A single result from the sample set determined to be asbestos-containing as per O. Reg. 278/05 results in the homogeneous material being determined to be an ACM. A homogeneous material is defined in O. Reg. 278/05, as one that is uniform in colour and texture. The surveyor used information obtained on Site by visual examination and available information on the phases of the construction and reported renovations, to determine the extent of each homogeneous area and the number of samples required. In addition, visual differences in applications were noted, where possible.

In areas where finished surfaces required partial removal to inspect hidden materials (e.g., concrete block wall cores, etc.), a small opening was cut/punched to allow for inspection and sampling of the underlying materials. All openings were re-sealed with industrial adhesive tape.

Bulk samples of suspected ACM were collected and submitted under chain of custody protocol to EMC Scientific (EMC) in Mississauga, Ontario in 2017 and 2018. EMC is accredited for bulk asbestos analysis by the National Voluntary Laboratory Accreditation Program (NVLAP). Samples were analyzed using polarized light microscopy (PLM) methodology (EPA/600/R-93/116). This method is specified by O. Reg. 278/05 for establishing whether the material is asbestos-containing and defining the content and type of asbestos. The laboratory followed a "positive-stop" analysis methodology and stop analyzing a sample set if any one of the series of samples proves to be positive for the presence of asbestos in a concentration equal to or greater than 0.5% by dry weight. Therefore, multiple samples collected of a homogeneous material in order to satisfy the requirements of O. Reg. 278/05 were not analyzed once a sample was identified as asbestos-containing (i.e., $\geq 0.5\%$ asbestos by dry weight).

Where building materials are described in this report as non-asbestos containing or described as containing no asbestos, this is subject to the limitations of the analytical method used and should be understood to mean no asbestos was detected by the laboratory at concentrations $\geq 0.5\%$ but may remain bound in compounds or in a smaller size than detectable by the specified method.

3.4.1 BASIS OF EVALUATION

The condition and the potential for disturbance of identified ACM were visually evaluated. The evaluation criteria were based on existing O. Reg. 278/05 and professional experience involving the management of ACM in buildings.

An ACM was considered damaged if it is sprayed material that is delaminating, mechanical insulation with damaged or missing insulation or jacketing; or, non-friable materials that have been pulverized or damaged so that they may have become friable.

The priority for remedial action is not only based on the evaluation of condition, but also on several other factors that include the following:

- Accessibility or potential for direct contact and disturbance.
- Practicality of repair (e.g., will damage to the ACM continue after it is repaired).
- Visibility/accessibility of the material.
- Efficiency of the work (e.g., if damaged ACM is being removed in an area, it may be most practical to remove all ACM in the area even if it is in good condition).

3.4.2 ACM EVALUATION – ASSESSMENT OF CONDITION

In evaluating the condition of friable ACM, the following criteria are used:

GOOD Material is completely adhered to substrate and/or exhibits no evidence of damage or deterioration. Exposed sprayed fireproofing (thermal insulation) is considered to be in good condition, where no fallout or debris is present below. Painted texture finishes are in good condition (unpainted texture is considered to be in fair condition).

FAIR Minor penetration damage to paint covered surface (cracks, dents, nicks, deterioration, water damage or delamination). Friable ACM is exposed but not showing surface disintegration. The extent of missing material should be minor to none and the damage should be readily repairable. Fireproofing is either Good or Poor condition.

POOR Materials is delaminating, falling or hanging from applied surface.

Non-friable ACM was considered to be in poor condition if they have been pulverized or damaged so that they have become friable. Broken, cracked or loose materials are considered to be in fair condition.

3.4.3 PRESUMED ACM - SAMPLING EXCLUSIONS

A number of materials that may contain asbestos in the Area of Work were not sampled during this survey and includes, but is not limited to the following:

- Sampling the materials may cause consequential damage to the property or inaccessible without major demolition; and,
- Sampling the material may have been hazardous to the surveyor.

Where materials are suspected to be present, these materials must be presumed to be asbestos-containing until proven otherwise by laboratory analysis and sampling and subsequent analysis immediately prior to commencing renovation is typically the best practice.

3.5 LEAD-CONTAINING MATERIALS

The survey included an inspection of building materials suspected to contain lead (e.g., paint, etc.). Details of location, description, and condition were recorded.

Paint chip samples were generally collected of typical primary paint colours from common building materials which would be subject to maintenance or disposal during demolition such as walls, floors and trim, etc. It was not the intent to sample minute colours (i.e. one random trim colour). Building materials with prefinished coating (e.g., metal siding), where a sample could not be obtained without extensive damage, where substrate interference may pose and

issue or if the paint coating was inaccessible (e.g., located at an elevated height) were not collected.

In 2018, paint chip samples of primary paint colors were collected and submitted to Caduceon Environmental Laboratories (Caduceon) for lead analysis. Paint was also analyzed for arsenic, and mercury (refer to Sections 3.3 and 3.4). Caduceon is accredited for lead analysis by the Canadian Association for Laboratory Accreditation (CALA). The paint samples were analyzed using Environmental Protection Agency (EPA) 6010 methodology.

3.6 ARSENIC

The survey included an inspection of building materials suspected to contain arsenic (e.g., paint, etc.). Paint chip samples suspected to contain arsenic were collected and submitted to Caduceon for analysis of arsenic content. The samples were analyzed for arsenic using EPA 6020 methodology.

3.7 MERCURY

The survey included an inspection of building materials suspected to contain mercury (e.g., paint, etc.). Paint chip samples suspected to contain mercury were collected and submitted to Caduceon for analysis of mercury content. The samples were analyzed for mercury using EPA 7471A methodology.

3.8 SILICA

Silica may be present in many building materials and is therefore expected to be present within materials in the Area of Work. Given the common presence of silica-containing building materials and that building operators and contractors commonly encounter these materials, the survey only included the visual identification of suspected silica sources. As with common practice, the potential silica containing building materials were not quantified. Given the visual identification methodology, the scope of work excluded bulk sampling of silica containing products

3.9 PCBs

The survey included an inspection of building materials suspected to contain PCBs (e.g., paint, etc.). Bulk samples of caulking/roofing material suspected to contain PCBs were submitted under chain of custody protocol to Caduceon for analysis in 2018. Bulk samples of caulking/roofing material suspected to contain PCBs were submitted under chain of custody protocol to Amec Foster Wheeler Chemistry Lab in 2017. The samples were analyzed for PCBs in accordance with U.S. EPA SW 846 8082A.

3.10 CHROMIUM

The survey included an inspection of building materials suspected to contain chromium (e.g., paint, etc.). Paint chip samples suspected to contain chromium were collected and submitted to Caduceon for analysis of chromium content. Samples were analyzed for chromium using EPA 3050/6010 methodology.

4.0 RESULTS

Ms. Sascha Mills and Ms. Laura Riffel of Amec Foster Wheeler performed the targeted pre-renovation DSHMS of the roof (i.e., Area of Work) on 29 June 2017. Mr. Kyle Huffman and Ms. Laura Riffel of Wood performed the targeted pre-renovation DSHMS re-inspection of the roof (i.e., Area of Work) on 20 June 2018. Previous DSHMS reports and abatement records were not made available by DCC for review at the time of the survey.

The following sections provide an overview of the individual designated substances and hazardous materials included in the DSHMS scope of work and the presence of such substances in accessible locations of the Areas of Work identified during the time of the survey.

4.1 GENERAL DESCRIPTION OF AREA OF WORK

The Area of Work includes the roof of Building B052, Hangar 10, as outlined in the SOW, as the area that will be affected by the proposed roof renovations.

Based on conditions as observed during the time of the Site visit, the general building details in the Area of Work were as follows:

- Roofing materials consisting of shingles, tar, insulation, felt, paper, and caulking

4.2 ASBESTOS-CONTAINING MATERIALS (ACMs)

At the time of the 2017 survey, a total of eighteen (18) bulk samples were collected of suspected ACM from accessible homogeneous building materials within the Area of Work and submitted for laboratory analysis. During the 2018 assessment, an additional six (6) bulk samples were collected and submitted for analysis.

The following sections provide the findings of the ACM survey and organized based on the more common types of materials where ACM was historically known to have been readily used. The floor plan for the Area of Work with sample locations and sample IDs are shown on Figure 1.

4.2.1 VARIOUS ROOFING MATERIALS

Eight (8) visually distinct roofing materials were sampled from the Area of Work, as follows;

- Grey roofing materials (Samples 1A-C) was sampled from the middle roof, submitted for laboratory analysis and found to be non-asbestos containing as per O. Reg. 278/05.
- White flashing caulking (Samples 2A-C) was sampled from the middle roof, submitted for laboratory analysis and found to be non-asbestos containing as per O. Reg. 278/05.
- Tan caulking (Samples 3A-C) was sampled from the middle roof, submitted for laboratory analysis and found to be non-asbestos containing as per O. Reg. 278/05.
- Brown roofing shingle material (Samples 4A-C) were sampled from the east and west sloped roof and found to contain 7% chrysotile asbestos.
- Brown caulking (Samples 5A-C) was sampled from the east and west sloped roof, submitted for laboratory analysis and found to be non-asbestos containing as per O. Reg. 278/05.
- Transite (Samples 6A-C) was sampled from the middle roof and found to contain 40% amosite asbestos.

- Grey duct caulking (Samples 1A-C) was sampled from the middle roof in 2018, submitted for laboratory analysis and found to be non-asbestos containing as per O. Reg. 278/05.
- White duct caulking (Samples 2A-C) was sampled from the middle roof in 2018, submitted for laboratory analysis and found to be non-asbestos containing as per O. Reg. 278/05.

A summary of the ACMs identified in the Area of Work (i.e. caulking/roofing material), samples collected, sample locations, general description of the material and the reported analytical results are provided in Table 1- Bulk Sample Results- Materials Determined to be Asbestos-Containing Bulk Sample Results and Table 2- Materials Determined to be Non-Asbestos-Containing. Photographs of samples collected and of the overall roof are presented in Appendix A. A copy of the certificate of analysis is provided in Appendix B.

4.3 LEAD-CONTAINING MATERIALS

4.3.1 LEAD-CONTAINING PAINT

One (1) bulk sample of paint was collected and submitted for lead analysis. The paint sample was found to contain 0.107% by dry weight. It is estimated that there is approximately 500 m² of this paint on the structural beams in the Area of Work.

A summary of lead paint identified in the Area of Work, samples collected, sample locations, general description of the material and the reported analytical results are provided in Table 4. Photographs of samples collected and of the overall roof are presented in Appendix A. A copy of the certificate of analysis is provided in Appendix B.

4.4 ARSENIC

One (1) bulk sample of paint was collected and submitted for analysis for arsenic content. The sample submitted for analysis was found to be below the analytical detection limit.

A summary of arsenic paint identified in the Area of Work, samples collected, sample locations, general description of the material and the reported analytical results are provided in Table 4. Photographs of samples collected and of the overall roof are presented in Appendix A. A copy of the certificate of analysis is provided in Appendix B.

4.5 MERCURY

One (1) bulk sample of paint were collected and submitted for analysis of mercury content. The sample was found to contain 0.0000491% by weight, which is below 0.001% by dry weight, which is the limit utilized by Wood for the purposes of this report.

A summary of mercury paint identified in the Area of Work, samples collected, sample locations, general description of the material and the reported analytical results are provided in Table 4. Photographs of samples collected and of the overall roof are presented in Appendix A. A copy of the certificate of analysis is provided in Appendix B.

4.6 SILICA

Suspected crystalline silica-containing materials were identified in the accessible areas of the Area of Work and is suspected to be present in all concrete products within the Area of Work.

4.7 OTHER DESIGNATED SUBSTANCES

No evidence suggesting the significant presence of acrylonitrile, arsenic, benzene, ethylene oxide, isocyanates, vinyl chloride, or coke oven emissions was observed in the Area of Work during the time of the survey and none were reported by the client. These designated substances are not typically found in building materials in a composition or state that is hazardous during general renovation activities.

4.8 PCBs

Wood collected and submitted five (5) samples of caulking/roofing materials for analysis for PCB analysis in 2017 and an additional two (2) samples in 2018. Laboratory analysis was performed under analytical method SW-846 8082. All samples were found to be below the Regulatory Limit of 50 ppm for solids as outlined in Section 2.2.1 of the EPA PCB regulation.

A summary of the caulking/roofing material samples collected, sample locations, general description of the material and the reported analytical results are provided in Table 3. A copy of the Certificates of Analysis Reports are provided in Appendix B.

4.9 CHROMIUM

One (1) bulk sample of paint were collected and submitted for analysis of chromium content. The sample was found to contain 0.0267% by weight.

A summary of chromium paint identified in the Area of Work, samples collected, sample locations, general description of the material and the reported analytical results are provided in Table 4. Photographs of samples collected and of the overall roof are presented in Appendix A. A copy of the certificate of analysis is provided in Appendix B.

5.0 CONCLUSIONS

The targeted pre-renovation DSHMS of the specified Area of Work completed for the roof of the Building B052 Hangar 10 at the CFB Trenton (Area of Work), Astra, Ontario in general accordance with the DCC SOW and Wood's Proposal No. PSWL169271.

Based on the visual inspection of accessible areas in the Area of Work and laboratory bulk sample results, the following Designated Substances and Hazardous Materials were identified in the Area of Work:

Asbestos-Containing Materials (ACMs)

- Brown roofing shingle material was found to contain 7% chrysotile asbestos (~16,815 square meters). The brown roofing shingle is considered a non-friable material.
- Transite was found to contain 40% amosite asbestos (~1,175 square meters). The transite is considered a non-friable material.

Lead

- One (1) bulk sample of paint was collected and submitted for lead analysis. The paint sample was found to contain 0.107% by dry weight (approximately 500 m²).

Mercury

- One (1) bulk sample of paint were collected and submitted for analysis of mercury content. The sample was found to contain 0.0000491% by weight, which is below

0.001% by dry weight, which is the limit utilized by Wood for the purposes of this report.

Arsenic

- One (1) bulk sample of paint was collected and submitted for analysis for arsenic content. The sample submitted for analysis was found to have arsenic levels below the analytical detection limit.

Silica

- Crystalline silica is presumed to be present in the concrete and masonry products present in the Areas of Work.

Polychlorinated biphenyl (PCB)

- Wood collected and submitted seven (7) samples of caulking/roofing materials for analysis for PCB analysis. Laboratory analysis was performed under analytical method SW-846 8082. All samples were found to be below the Regulatory Limit of 50 ppm for solids as outlined in Section 2.2.1 of the EPA PCB regulation.

Chromium

- One (1) bulk sample of paint were collected and submitted for analysis of chromium content. The sample was found to contain 0.0267% by weight.

6.0 RECOMMENDATIONS

The following recommendations are provided based on the findings of the targeted pre-renovation DSHMS of the specified Area of Work for the roof of Building B052 Hangar 10, as outlined in this report.

The presence of designated substances during renovations or demolition projects require protective measures to be employed to minimize potential worker exposure in accordance with

the OHSA, O. Reg. 278/05 and relevant guidelines, as outlined in this report. All waste handling is regulated by O. Reg. 347.

6.1 WORKER NOTIFICATION – DESIGNATED SUBSTANCES

The building owner must notify all employees and contractors involved with building maintenance, renovations, and/or demolition activities, of the presence of designated substances, as required by the OHSA. A copy of this report should also be made available to the Joint Occupational Health and Safety Committee (JOHSC).

This report, along with abatement work plans and specifications must be given to the constructor. In turn the constructor must provide this report to contractors and sub-contractors.

Prior to tendering project work in the building, the building owner or owner's agent must provide this report, work plan and abatement specifications to constructors bidding on the project work. In turn, the constructor must provide this to contractors and subcontractors prior to requesting bids. This report also fulfills the requirements of Section 10 of O. Reg. 278/05. This requires that owners report the presence of both friable and non-friable ACMs to constructors as part of the tendering process or prior to arranging for work.

Constructors/contractors must use the information when filing a Notice of Project Form with the MOL. In Section 6 of the form, check all Designated Substances listed in this report that will be disturbed. The type of asbestos abatement operation (Type 1, 2, or 3 operations) must be selected in Section 5 of the form.

6.2 ASBESTOS-CONTAINING MATERIALS (ACM)

6.2.1 FRIABLE ACM

Friable ACM was not identified in accessible locations of the Area of Work.

6.2.2 NON-FRIABLE ACM

Both the brown roofing shingles, which contains 7% chrysotile asbestos and transite, which contains 40% amosite asbestos, are considered non-friable materials and were noted to be in good condition at the time of the assessment.



Non-friable ACM that is not significantly damaged is not expected to release airborne asbestos fibres under normal conditions of building use.

6.2.3 ABATEMENT

Asbestos abatement procedures are classified as Type 1 (low risk), Type 2 (moderate risk), and Type 3 (high risk) depending on friability, type and quantity of ACM. Risk classifications are not included in O. Reg. 278/05; however, they have been included for comparison purposes and are based on general industry terminology. Asbestos abatement must be completed by qualified personnel and Type 3 abatement operations by personnel that have completed Type 3 abatement certification training recognized by the MOL to comply with O. Reg. 278/05.

6.2.3.1 SPECIFIC PROCEDURES

Type 1 procedures are typically required for non-friable material handling, using wet procedures and non-powered hand tools.

6.2.4 DEMOLITION AND RENOVATION PROJECTS

All ACM must be removed from the area of a renovation prior to renovations and demolition projects to comply with O. Reg. 278/05. Removal or abatement of ACM must be completed by a qualified asbestos abatement worker and in accordance with the requirements of O. Reg. 278/05.

All suspected ACM encountered during demolition or renovation projects, unless confirmed through sampling and analysis, should be treated to be ACM and handled in accordance with O. Reg. 278/05, until proven otherwise. Unforeseen discoveries of asbestos must be reported to the MOL, owner, etc., to remain in compliance with the Regulation.

6.2.5 MANAGEMENT (LONG-TERM)

If all ACM is not removed, the ACM must be inspected at least every 12 months and be managed by an Asbestos Management Program (AMP) in accordance with O. Reg. 278/05. All friable ACM that remains in-place must be in good physical condition, and removal or repair is required when friable ACM becomes damaged (refer to Section 7.2.5).

If the Site contains ACM, an Asbestos Management Program is required for any asbestos containing material (friable and non-friable) which is not removed. As part of asbestos management, the Owner shall;

1. Prepare and maintain on the premises a record of the location of all identified ACM.
The record shall contain whether the material is friable or non-friable and shall be updated at least once in each 12-month period.
2. Regulatory Requirements and Client Policies.
3. Roles and Responsibilities.
4. Notifications to occupants and/or tenants. Give any other person who is an occupier of the building written notice of any information in the record that relates to the area they occupy or any work done by that person.
5. Establish and maintain an asbestos awareness program for all building personnel who are likely to work in close proximity to/or may potentially disturb the friable ACM in accordance with Section 8(3) of O. Reg. 278/05. The program should include: (i) the hazards of asbestos exposure; (ii) the use, care and disposal of protective equipment and clothing to be used and worn when doing the work; (iii) personal hygiene to be observed when doing the work; and (iv) the measures and procedures prescribed in the regulations.
6. Emergency Reaction and Procedures.
7. Work Practices (Type 1, 2, 3 and Glove Bag work).
8. Record Keeping.
9. Contractor Requirements

6.3 LEAD-CONTAINING MATERIALS

Lead-containing products disturbed during construction/renovation may result in worker exposure to lead. Cutting, grinding, drilling, removing, stripping or demolition of materials

containing or coated with lead should be completed only with respiratory protection, as outlined, and worker safety precautions as outlined in the *Ministry of Labour Guideline – Lead on Construction Projects, 2004* (MOL Guideline). The MOL has not established a lower limit for concentrations of lead in paint (or other materials) below which precautions do not need to be considered. Therefore, the precautions and details of worker safety will need to be assessed on a project-by-project basis. We recommend that the building owner and contractor obtain advice to develop a site-specific safety plan that considers the factors that would affect potential lead exposure of workers. Paints and materials with concentrations lower than 0.5% lead may require modified or reduced procedures than those outlined in the Guideline, however airborne lead exposures at any level may be a concern.

The building owner and/or contractor should develop site specific procedures for the MOL designated lead operations. These lead operations and procedures and practices are outlined in the MOL Guideline, however site specific procedures should be considered.

The disposal of construction waste containing lead is controlled under O. Reg. 347 and may be subject to lead leachate analysis prior to disposal (Leachate Criteria, Schedule 4 of O. Reg. 347).

6.4 ARSENIC

Typically a worker's exposure to arsenic is considered low if material surfaces and coatings remain intact (in good physical condition).

Although there are no specific criteria for arsenic content in paint, appropriate dust and worker protection procedures must be taken to limit exposure to arsenic-containing particulate during renovation or demolition projects.

6.6 SILICA

Crystalline silica is presumed to be present in concrete and other masonry products. Construction disturbance of silica-containing products may result in exposures to airborne silica, especially if performed indoors and/or while dry. Cutting, grinding, drilling or demolition of silica-containing materials should be completed with proper respiratory protection and worker safety precautions as outlined in the *Ministry of Labour Guideline – Silica on Construction Projects, 2004*.

7.0 SURVEY LIMITATIONS

Within the limitations of the agreed-upon scope of work, the field observations, measurements and analysis are considered sufficient to form a general inventory of hazardous materials in the Areas of Work. It should be noted that the data presented herein were collected at specific sampling locations, and depending on the homogeneity of the samples, the data may vary between these locations. Some inherent limitations exist as to the thoroughness of this assessment due to the nature of building construction. For example it may not practical to test all pipe insulation for asbestos content or all paint for lead content at the Site due to the amount and locations and being located under existing materials. Some reasonable extrapolation (e.g., sampling of similar materials) was required from the findings of the assessment. For example, samples of suspect ACM were not collected in each homogeneous area of the building when homogeneous materials of a similar nature, composition, and color were sampled in other homogeneous areas.

Within the limitations of the agreed-upon scope of work, the survey included building materials found within or forming part of accessible locations of the sloped asphalt shingled roofs. The inspection excluded the identification of suspected designated substances located in the flat roof sections or attic spaces of the buildings. Wood is not responsible for the repairs of building materials that were sampled during the survey.

Within the limitations of the agreed-upon scope of work, this assessment has been undertaken and performed in a professional manner in accordance with generally accepted practices, using the degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. Due to physical limitations inherent to this assessment, Wood expressly does not warrant that the Site is free of designated substances or that all designated substances have been identified. No other warranties, expressed or implied, are made. Refer to Appendix C.

8.0 CLOSURE

Wood has prepared this report for the express use of the Client and may be relied upon by the Client. No other person or organization is entitled to rely upon any part of this report without the prior written consent of Wood. The Client may release all or part(s) of this report to third parties; however, such third party in using this report agrees that it shall have no legal recourse against Wood or its subsidiaries, and shall indemnify and defend Wood or its subsidiaries from and against all claims arising out of or in conjunction with such use or reliance. This report does not constitute legal advice. In addition, Wood makes no determination or recommendation regarding the decision to purchase, sell or provide financing for this property.

This report presents an overview of issues of concern with the specified designated substances, and included hazardous building materials reflecting Wood's best judgment using information reasonably available at the time of Wood's Site survey. In preparing this report, Wood has relied upon certain information and representations provided by others (eg., laboratory analysis). Wood did not attempt to independently verify the accuracy or completeness of that information. To the extent that the conclusions in this report are based in whole or in part on such information, those conclusions are contingent on its accuracy and validity. Wood assumes no responsibility for any consequence arising from any information or condition that was concealed, withheld, misrepresented, or otherwise not fully disclosed or available to Wood. No other warranty, expressed or implied, is made.

If you require any assistance or have any question, please contact the undersigned at (519) 681-2400.

Defence Construction Canada
Targeted Pre-Renovation DSHM Survey Report
Building B052 Hangar 10 Roof
CFB Trenton – 8 Wing
Astra, Ontario
5 November, 2018



Respectfully Submitted,

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Defence Construction Canada
Targeted Pre-Renovation DSHM Survey Report
Building B052 Hangar 10 Roof
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TABLES





TABLE 1 Bulk Sample Results - Materials Determined to be Asbestos Containing						
Wood Sample No.	Lab Sample ID No.	Photo No.	Sample Location	Sample Description	Friable	Laboratory Results
						Type & % Asbestos Fibres
4A	A32456-10	1	East Roof	Brown Roofing Shingle Material	No	7% Chrysotile
6A	A32456-16	2	Middle Roof	Transite	No	40% Amosite

Table 1 represents a summary of bulk sample laboratory results and must be used in conjunction with the detailed findings and recommendations provided in the targeted DSHMS report.





TABLE 2
Bulk Sample Results - Materials Determined to be Non-Asbestos Containing

Wood Sample No.	Lab Sample ID No.	Year Sampled	Sample Location	Sample Description	Laboratory Results
					Type & % Asbestos Fibres
1A	A32456-1	2017	Middle Roof	Grey Roofing	None Detected
1B	A32456-2	2017	Middle Roof	Grey Roofing	None Detected
1C	A32456-3	2017	Middle Roof	Grey Roofing	None Detected
2A	A32456-4	2017	Middle Roof	Off-White Caulking	None Detected
				Grey Caulking	
				Black Tar	
2B	A32456-5	2017	Middle Roof	Off-White Caulking	None Detected
				Black Tar	
2C	A32456-6	2017	Middle Roof	Off-White Caulking	None Detected
				Black Tar	
3A	A32456-7	2017	Middle Roof	Beige Caulking	None Detected
				Black Tar	
3B	A32456-8	2017	Middle Roof	Beige Caulking	None Detected
				Black Tar	
3C	A32456-9	2017	Middle Roof	Beige Caulking	None Detected
				Black Tar	
5A	A32456-13	2017	West Roof	Brown Caulking	None Detected
5B	A32456-14	2017	West Roof	Brown Caulking	None Detected
				Black Tar	
5C	A32456-15	2017	West Roof	Brown Caulking	None Detected
1A	A41205-1	2018	Middle Roof	Grey Duct Caulking	None Detected
1B	A41205-2	2018	Middle Roof	Grey Duct Caulking	None Detected
1C	A41205-3	2018	Middle Roof	Grey Duct Caulking	None Detected
2A	A41205-4	2018	Middle Roof	White Duct Caulking	None Detected
2B	A41205-5	2018	Middle Roof	White Duct Caulking	None Detected
2C	A41205-6	2018	Middle Roof	White Duct Caulking	None Detected

Table 2 represents a summary of bulk sample laboratory results and must be used in conjunction with the detailed findings and recommendations provided in the targeted DSHMS report.



TABLE 3					
Summary of Bulk Sample Results – PCB's in Caulking/Roofing Materials					
Wood Sample No.	Lab ID No.	Year Sampled	Sample Location	Sample Description	Laboratory Results (mg/Kg)
PCB1	17-5274	2017	Middle Roof	Grey Roofing	<0.5
PCB2	17-5275	2017	Middle Roof	White Caulking	<0.5
PCB3	17-5276	2017	Middle Roof	Tan Caulking	<0.5
PCB4	17-5277	2017	East Roof	Brown Roofing	<0.5
PCB5	17-5278	2017	West Roof	Brown Caulking	<0.5
PCB1	B18-197987-1	2018	Middle Roof	Grey Duct Caulking	<1
PCB2	B18-197987-1	2018	Middle Roof	White Duct Caulking	<1

Table 3 represents a summary of bulk sample laboratory results and must be used in conjunction with the detailed findings and recommendations provided in the targeted DSHMS report. The results indicate that the analyte was not detected at the reporting limit.

TABLE 4				
Summary of Paint Sample Results – Lead, Mercury, Arsenic, Chromium, and PCBs				
Sample	Sample Description	Location	Laboratory Results (% by weight)	
L1	Pink Paint	B052 Exterior Roof	Lead	0.107
			Mercury	0.0000491
			Arsenic	<0.00005
			Chromium	0.0267
			PCBs	<0.0001

Table 4 represents a summary of bulk sample laboratory results and must be used in conjunction with the detailed findings and recommendations provided in the targeted DSHMS report.

TABLE 5		
Summary of Paint TCLP Results – Arsenic, Chromium, Lead, and Mercury		
	Sample L-1	
Parameter	Pink Paint (mg/L)	Schedule 4 Leachate Criteria (mg/L)
Chromium	0.028	5
Lead	34.5	5
Mercury	<0.00002	0.1
Arsenic	NA	2.5

Notes:

- Standards obtained from Schedule 4 of O. Reg. 347/90
 "NA" defines samples that were below the reliable detection limit

Defence Construction Canada
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Building B052 Hangar 10 Roof
CFB Trenton – 8 Wing
Astra, Ontario
5 November 2018



FIGURE
LAYOUT PLANS & SAMPLE LOCATIONS



DATE PLOTTED: 7/31/2018 3:09:32 PM
FILE LOCATION: P:\2016\Projects\OTHER OFFICES\Cambridge\SWC169197_DCC_Project_T1602990_Contract_62586\00_Drafting\AutoCAD\SWC169197-R02001.dwg



- LEGEND:
- SAMPLE LOCATION (2018)
 - ◆ SAMPLE LOCATION (2017)
 - LEAD, CHROMIUM AND MERCURY CONTAINING PAINT

NOTES:
THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS REPORT No. SWC169197.
ALL LOCATIONS ARE APPROXIMATE.

REFERENCES:
DRAWING BASED ON 2013 AERIAL IMAGE FROM THE COUNTY OF HASTINGS INTERACTIVE WEB MAPPING SITE.

CLIENT: DEFENCE CONSTRUCTION CANADA
CFB TRENTON
8 WING
ASTRA, ONTARIO, K8V 5P8

Wood Environment &
Infrastructure Solutions
900 MAPLE GROVE ROAD, UNIT 10
CAMBRIDGE, ONTARIO
N3H 4R7
519-650-7100

wood.

DWN BY: LMK
CHK'D BY: LR
DATUM: NAD83
PROJECTION: UTM Zone 18
SCALE: 1:1,000

PROJECT: TARGETED PRE-RENOVATION
DESIGNATED SUBSTANCE & HAZARDOUS MATERIALS SURVEY
B052 - HANGAR 10

TITLE: 52 NORTH STAR DRIVE
SAMPLE LOCATION PLAN

DATE: JULY 31, 2018
PROJECT No: SWC169197
REV No: 0
FIGURE No: 1

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Building B052 Hangar 10 Roof
CFB Trenton – 8 Wing
Astra, Ontario
5 November 2018



APPENDIX A PHOTOGRAPHIC LOG



	Photo 1: Brown roofing materials (Samples 4A-C) was sampled from the east and west sloped roof and were found to contain 7% Chrysotile asbestos. Condition: Good
	Photo 2: Transite (Samples 6A-C) was sampled from the Middle Roof of the building and was found to contain 40% Amosite asbestos. Condition: Good



Photo 3:

Pink paint (Sample L1) was sampled from the structural beams on the roof and was found to contain 0.0267% chromium, 0.107% lead, and 0.0000491% mercury by dry weight.

Condition:

Good

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Building B052 Hangar 10 Roof
CFB Trenton – 8 Wing
Astra, Ontario
5 November 2018



APPENDIX B LABORATORY CERTIFICATES OF ANALYSIS



Laboratory Analysis Report

To:

Laura Riffel
AMEC Foster Wheeler
Environment & Infrastructure
201 King Street, 4th Floor
London, Ontario
N6A 1C9

EMC LAB REPORT NUMBER: A32456

Job/Project Name: DCC Trenton Roofing – B052

Analysis Method: Polarized Light Microscopy – EPA 600

Date Received: Jul 4/17

Date Analyzed: Jul 11/17

Analyst: Malgorzata Sybydlo, *Laboratory Manager*

Job No: SWC169197

Number of Samples: 18

Date Reported: Jul 11/17



Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)			
				Asbestos Fibres		Non-asbestos Fibres	Non-fibrous Material
1A	A32456-1	Grey roofing materials – middle roof	Black, roofing	ND		10	90
1B	A32456-2	Grey roofing materials – middle roof	Black, roofing	ND		20	80
1C	A32456-3	Grey roofing materials – middle roof	Black, roofing	ND		20	80
2A	A32456-4 ⁵	White flashing caulking – middle roof	3 Phases: a) Off-white caulking b) Grey, caulking c) Black, tar	ND ND			100 100
2B	A32456-5	White flashing caulking – middle roof	2 Phases: a) Off-white caulking b) Black, tar	ND ND			100 100
2C	A32456-6	White flashing caulking – middle roof	2 Phases: a) Off-white caulking b) Black, tar	ND ND			100 100
3A	A32456-7	Tan caulking – middle roof	2 Phases: a) Beige, caulking b) Black, tar	ND ND			100 100
3B	A32456-8	Tan caulking – middle roof	2 Phases: a) Beige, caulking b) Black, tar	ND ND			100 100

Laboratory Analysis Report

EMC LAB REPORT NUMBER: A32456

Client's Job/Project No.: SWC169192

Analyst: Malgorzata Sybydlo, *Laboratory Manager*

Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)			
				Asbestos Fibres		Non-asbestos Fibres	Non-fibrous Material
3C	A32456-9	Tan caulking – middle roof	2 Phases: a) Beige, caulking b) Black, tar	ND ND			100 100
4A	A32456-10	Brown roofing material east roof	Black, roofing	Chrysotile	7	20	73
4B	A32456-11	Brown roofing material west roof	NA	NA			
4C	A32456-12	Brown roofing material west roof	NA	NA			
5A	A32456-13 ⁶	Brown caulking west roof	Brown, caulking	ND			100
5B	A32456-14 ⁷	Brown caulking west roof	2 Phases: a) Brown, caulking b) Black tar	ND ND			100 100
5C	A32456-15 ⁶	Brown caulking west roof	Brown, caulking	ND			100
6A	A32456-16	Transite middle roof	White, cementitious material with fibres	Amosite	40		60
6B	A32456-17	Transite middle roof	NA	NA			
6C	A32456-18	Transite middle roof	NA	NA			

Note:

1. Bulk samples are analyzed using Polarized Light Microscopy (PLM) and dispersion staining techniques. The analytical procedures are in accordance with EPA 600/R-93/116 method.
2. The results are only related to the samples analyzed. **ND** = None Detected (no asbestos fibres were observed), **NA** = Not Analyzed (analysis stopped due to a previous positive result).
3. This report may not be reproduced, except in full without the written approval of EMC Scientific Inc. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.
4. The Ontario Regulatory Threshold for asbestos is 0.5%. The limit of quantification (LOQ) is 0.5%.
5. Phase c) is small in size.
6. Another phase is present but is too small to analyze.
7. Phase b) is small in size.

Laboratory Analysis Report

To:

Laura Riffel

Wood
201 King Street
London, Ontario
N6A 1C9

EMC LAB REPORT NUMBER: A41205

Job/Project Name: DCC Trenton Roofing

Analysis Method: Polarized Light Microscopy – EPA 600

Date Received: Jul 5/18

Date Analyzed: Jul 12/18

Analyst: Jayoda Perera, *Analyst*

Reviewed By: Jon Delos Santos, *Laboratory Supervisor*

Job No: SWC169197

Number of Samples: 6

Date Reported: Jul 12/18

Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)			
				Asbestos Fibres		Non-asbestos Fibres	Non-fibrous Material
1A	A41205-1	Grey duct caulking B052	Grey, caulking	ND			100
1B	A41205-2	Grey duct caulking B052	Grey, caulking	ND			100
1C	A41205-3	Grey duct caulking B052	Grey, caulking	ND			100
2A	A41205-4	White duct caulking B052	White, caulking	ND			100
2B	A41205-5	White duct caulking B052	White, caulking	ND			100
2C	A41205-6	White duct caulking B052	White, caulking	ND			100

Note:

1. Bulk samples are analyzed using Polarized Light Microscopy (PLM) and dispersion staining techniques. The analytical procedures are in accordance with EPA 600/R-93/116 method.
2. The results are only related to the samples analyzed. **ND** = None Detected (no asbestos fibres were observed), **NA** = Not Analyzed (analysis stopped due to a previous positive result).
3. This report may not be reproduced, except in full without the written approval of EMC Scientific Inc. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.
4. The Ontario Regulatory Threshold for asbestos is 0.5%. The limit of quantification (LOQ) is 0.5%.

C.O.C.: ---

REPORT No. B18-19787

Report To:

EMC Scientific Inc.
5800 Ambler Dr. #100,
Mississauga ON L4W 4J4 Canada

Attention: Alister Haddad

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 09-Jul-18

JOB/PROJECT NO.: DCC Trenten - B052

DATE REPORTED: 17-Jul-18

P.O. NUMBER: SWC169197

SAMPLE MATRIX: Bulk

WATERWORKS NO.

Parameter			Lead	Poly-Chlorinated Biphenyls (PCB's)			
Units			% by wt	% by wt			
R.L.			0.0005	0.0001			
Reference Method			EPA 6010	EPA 8082			
Date Analyzed/Site			11-Jul-18/O	16-Jul-18/K			
Client I.D.	Sample I.D.	Date Collected					
PCB1 grey duct caulking	B18-19787-1	09-Jul-18	< 0.0005	< 0.0001			
PCB2 white duct caulking	B18-19787-2	09-Jul-18	< 0.0005	< 0.0001			

R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an *

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: ---

REPORT No. B18-19791

Report To:

EMC Scientific Inc.
5800 Ambler Dr. #100,
Mississauga ON L4W 4J4 Canada

Attention: Alister Haddad

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 09-Jul-18

JOB/PROJECT NO.: DCC Trenten - B052

DATE REPORTED: 17-Jul-18

P.O. NUMBER: SWC169197

SAMPLE MATRIX: Paint Chips

WATERWORKS NO.

	Parameter		Arsenic	Chromium	Lead	Mercury	Poly-Chlorinated Biphenyls (PCB's)
	Units		% by wt	% by wt	% by wt	% by wt	% by wt
	R.L.		0.00005	0.0001	0.0005	0.0000005	0.0001
	Reference Method		EPA 6020	EPA 6010	EPA 6010	EPA 7471A	EPA 8082
	Date Analyzed/Site		12-Jul-18/O	11-Jul-18/O	11-Jul-18/O	11-Jul-18/O	17-Jul-18/K
Client I.D.	Sample I.D.	Date Collected					
L1 Pink Paint	B18-19791-1	20-Jun-18	< 0.00005	0.0267	0.107	0.0000491	< 0.0001

R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an *

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

C.O.C.: ---

REPORT No. B18-22350

Report To:

EMC Scientific Inc.

5800 Ambler Dr. #100,
 Mississauga ON L4W 4J4 Canada

Attention: Alister Haddad

Caduceon Environmental Laboratories

2378 Holly Lane
 Ottawa Ontario K1V 7P1
 Tel: 613-526-0123
 Fax: 613-526-1244

DATE RECEIVED: 30-Jul-18

JOB/PROJECT NO.: DCC Trenten - B052

DATE REPORTED: 01-Aug-18

SAMPLE MATRIX: Soil/Leachate

P.O. NUMBER: SWC169197

WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
Mercury	1	Holly Lane	PBK	01-Aug-18	D-HG-02 (o)	SM 3112 B
Metals - ICP-OES	1	Holly Lane	TPR	01-Aug-18	D-ICP-01 (o)	SM 3120

O. Reg. 558 - O. Reg. 558
 Schedule 4 - Schedule 4 - Leachate Toxic Criteria

R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an *

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie



Greg Clarkin, BSc., C. Chem
 Lab Manager - Ottawa District

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C.O.C.: ---

REPORT No. B18-22350

Report To:

EMC Scientific Inc.
5800 Ambler Dr. #100,
Mississauga ON L4W 4J4 Canada

Attention: Alister Haddad

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 30-Jul-18

JOB/PROJECT NO.: DCC Trenten - B052

DATE REPORTED: 01-Aug-18

P.O. NUMBER: SWC169197

SAMPLE MATRIX: Soil/Leachate

WATERWORKS NO.

Client I.D. Sample I.D. Date Collected			L1 Pink Paint B18-22350-1 20-Jul-18				O. Reg. 558 Schedule 4	
Parameter	Units	R.L.						
Chromium	mg/L	0.002	0.028				5.0	
Lead	mg/L	0.02	34.5				5.0	
Mercury	mg/L	0.00002	< 0.00002				0.1	

O. Reg. 558 - O. Reg. 558
Schedule 4 - Schedule 4 - Leachate Toxic Criteria

R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an *

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

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C.O.C.: ---

REPORT No. B18-22350

Report To:

EMC Scientific Inc.
5800 Ambler Dr. #100,
Mississauga ON L4W 4J4 Canada

Attention: Alister Haddad

Caduceon Environmental Laboratories

2378 Holly Lane
Ottawa Ontario K1V 7P1
Tel: 613-526-0123
Fax: 613-526-1244

DATE RECEIVED: 30-Jul-18

JOB/PROJECT NO.: DCC Trenten - B052

DATE REPORTED: 01-Aug-18

P.O. NUMBER: SWC169197

SAMPLE MATRIX: Soil/Leachate

WATERWORKS NO.

Summary of Exceedances

Schedule 4 - Leachate Toxic Criteria

L1 Pink Paint	Found Value	Limit
Lead (mg/L)	34.5	5.0

O. Reg. 558 - O. Reg. 558
Schedule 4 - Schedule 4 - Leachate Toxic Criteria

R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an *

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie



Greg Clarkin, BSc., C. Chem
Lab Manager - Ottawa District

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

Final Analytical Report



Attention: David Penney

Amec Foster Wheeler Environment & Infrastructure
7-1940 Oxford St. E
London, ON N5V 4L8

Results for File: EC-72894

Project Number: SWC169197

Project Name: DCC Roofing Trenton B-052 Hangar Ten

Date Received: 2017/07/04

Date of Report: 2017/07/11

Report reviewed by:

A handwritten signature in blue ink, appearing to read "Jesse Dang".

Jesse Dang, B.Sc.
Manager
Laboratory Services

A handwritten signature in blue ink, appearing to read "Kristine Connor".

Kristine Connor
Director of QA/QC
Laboratory Services

** All samples will be disposed of after 30 days following analysis. Please contact the lab if you require additional sample storage time. (Samples deemed hazardous will be returned to the client at their own expense or disposal will be arranged.) **

Amec Foster Wheeler Environment & Infrastructure, Edmonton Chemistry
5667 - 70 Street, Edmonton, Alberta, Canada T6B 3P6
Tel: (780) 436-2152
www.amecfw.com

ANALYTICAL REPORT



Paint Analysis - Polychlorinated Biphenyls

Project No. SWC169197

Final
File No. EC-72894

Analyst	Date of Analysis (yyyy/m/d)	Analytical Parameter	Units	Reference Method	Lab #:	17-5274	17-5275	17-5276	17-5277
					Client ID:	PCB1- GreyRoofing(Mid)	PCB2- WhiteCaulking(Mid)	PCB3- TanCaulking(Mid)	PCB4- BrownRoofing(E)
					Sample Date:	2017/06/29 10:00	2017/06/29 10:00	2017/06/29 10:00	2017/06/29 10:00
					DL				
PC	2017/07/06	PCB - Total	mg/kg (ppm)	EPA 3550/8082	0.5	< 0.5	< 0.5	< 0.5	< 0.5
PC	2017/07/06	Decachlorobiphenyl Surrogate Recovery	%	EPA 3550/8082	0.1	68.1	116	73.4	60.6
PC	2017/07/06	Tetrachloro-m-xylene Surrogate Recovery	%	EPA 3550/8082	0.1	** 54.7	73.4	64.0	** 49.8

Analyst	Date of Analysis (yyyy/m/d)	Analytical Parameter	Units	Reference Method	Lab #:	17-5278
					Client ID:	PCB5- BrownCaulking(Mid)
					Sample Date:	2017/06/29 10:00
					DL	
PC	2017/07/06	PCB - Total	mg/kg (ppm)	EPA 3550/8082	0.5	< 0.5
PC	2017/07/06	Decachlorobiphenyl Surrogate Recovery	%	EPA 3550/8082	0.1	85.3
PC	2017/07/06	Tetrachloro-m-xylene Surrogate Recovery	%	EPA 3550/8082	0.1	73.1

Quality Control Standard

Project No. SWC169197

File No. EC-72894

Paint Analysis - Polychlorinated Biphenyls

Analyst	Date of Analysis (yyyy/m/d)	Analytical Parameter	Units	Reference Method	Analyzed Value	Advisory Range	Target Value	Reference No.
PC	2017/07/06	PCB - Total	ug/g(ppm)	EPA 3550/8082	12	6.30-18.0	14.8	ERA D040726

Analytical Comments

Project No. SWC169197

File No. EC-72894

** Surrogate recovery results low possibly due to sample matrix interference. Results have been verified.

All Analytical results pertain to samples analyzed as received.

DL - Detection Limit

EPA: U.S. Environmental Protection Agency. 2014. Test Methods of Evaluation of Solid Waste 3rd Ed through Update V. Office Solid Waste Emergency Response, U.S. Environmental Protection Agency, Washington, D.C.

Extraction and analysis limits for holding time for Hydrocarbons were met.

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CFB Trenton – 8 Wing
Astra, Ontario
5 November 2018



APPENDIX C LIMITATIONS



LIMITATIONS

1. The work performed in the preparation of this report and the conclusions presented are subject to the following:
 - (a) The Standard Terms and Conditions which form a part of our Professional Services Contract;
 - (b) The Scope of Services;
 - (c) Time and Budgetary limitations as described in our Contract; and
 - (d) The Limitations stated herein.
2. No other warranties or representations, either expressed or implied, are made as to the professional services provided under the terms of our Contract, or the conclusions presented.
3. The conclusions presented in this report were based, in part, on visual observations of the Site and attendant structures. Our conclusions cannot and are not extended to include those portions of the Site or structures, which are not reasonably available, in Wood's opinion, for direct observation.
4. The environmental conditions at the Site were assessed, within the limitations set out above, having due regard for applicable environmental regulations as of the date of the inspection. A review of compliance by past owners or occupants of the Site with any applicable local, provincial or federal by-laws, orders-in-council, legislative enactments and regulations was not performed.
5. The Site history research included obtaining information from third parties and employees or agents of the owner. No attempt has been made to verify the accuracy of any information provided, unless specifically noted in our report.
6. Where testing was performed, it was carried out in accordance with the terms of our contract providing for testing. Other substances, or different quantities of substances testing for, may be present on Site and may be revealed by different or other testing not provided for in our contract.
7. Because of the limitations referred to above, different environmental conditions from those stated in our report may exist. Should such different conditions be encountered, Wood must be notified in order that it may determine if modifications to the conclusions in the report are necessary.
8. The utilization of Wood's services during the implementation of any remedial measures will allow Wood to observe compliance with the conclusions and recommendations contained in the report. Wood's involvement will also allow for changes to be made as necessary to suit field conditions as they are encountered.
9. This report is for the sole use of the party to whom it is addressed unless expressly stated otherwise in the report or contract. Any use which any third party makes of the report, in whole or the part, or any reliance thereon or decisions made based on any information or conclusions in the report is the sole responsibility of such third party. Wood accepts no responsibility whatsoever for damages or loss of any nature or kind suffered by any such third party as a result of actions taken or not taken or decisions made in reliance on the report or anything set out therein.
10. This report is not to be given over to any third party for any purpose whatsoever without the written permission of Wood.

Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited

Limitations 4-2018





golder.com