



October 4, 2017

## CITY OF SASKATOON AND GENERAL MANAGEMENT SERVICES

# Asbestos-Containing Building Materials Assessment Report - Essex Plaza



### Submitted to:

The City of Saskatoon  
1101 Avenue P North  
Saskatoon, SK S7L 7K6  
&  
General Management Services  
224 – 2nd Avenue South  
Saskatoon, SK S7K 1K9

**Report Number: 1779656**

### Distribution:

One Copy: City of Saskatoon  
One Copy: General Management Services  
One Copy: Golder Associates Ltd.

REPORT





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### 1.0 INTRODUCTION

Golder Associates Ltd. (Golder) was retained by the City of Saskatoon (the Client) on behalf of General Management Services (the Owner) to conduct an asbestos-containing building materials assessment of Essex Plaza (the Site) located at 205/207 3<sup>rd</sup> Avenue North in Saskatoon, Saskatchewan. This assessment report details our findings, conclusions and recommendations for the Site. The assessment was conducted on June 17 and 20, 2017 by Kody Henderson, OHS Project Manager. Asbestos-containing building materials were identified within Essex Plaza during the assessment. Further information is provided in Section 3.0.

### 2.0 SCOPE OF WORK

In accordance with proposal P1779656, Golder's scope of work included conducting an asbestos-containing building materials assessment of the Site to evaluate the quantities, locations, and conditions of asbestos-containing building materials.

Following the field work, Golder prepared this assessment report that includes laboratory analysis results, findings of the assessment, conclusions, and recommendations.

#### 2.1 Asbestos-Containing Materials

The assessment involved a non-destructive inspection of the Site to assess the type and extent of suspect ACMs in the facility. The systems that were reviewed as part of the inspections included, but were not limited to:

- *Structural* - systems including: insulation between solid webbed joists, fireproofing, building envelope, and interior/exterior caulking around windows and doors;
- *Mechanical* - systems insulation including: hot water and steam system, condensate system, chilled water system, glycol system, domestic hot and cold water, emergency generator exhaust, boiler units, heat exchangers, and asbestos cement piping; and
- *Architectural* - systems including: texture coats, sheet flooring, vinyl floor tile, acoustical spray-applied materials, condensation control applications, ceiling tile, wall board, drywall joint compound, and asbestos sheet products.

Systematic sampling of suspect ACMs was conducted as part of the assessment. Samples were submitted under chain of custody to International Asbestos Testing Laboratory Inc. (IATL) and analyzed for asbestos type and percentage content using Polarized Light Microscopy (PLM) in accordance with EPA methodologies (EPA 600/R-93/116).

Further information related to the assessment and sample collection methods can be found in the Golder document *Golder Asbestos Assessment General Survey Plan and Protocol* provided to the Client.



### **3.0 RESULTS AND DISCUSSION**

Essex Plaza consists of numerous office spaces and an upstairs tenant property. No information related to the vintage of construction was provided. During the assessment, the interior of each unit was treated as its own functional space.

- The Laboratory Certificate of Analysis report for the bulk asbestos samples is included in Appendix A.
- Photographs collected during the assessment are provided in Appendix B.
- A room by room spreadsheet outlining the locations, quantities, friability, and condition of identified asbestos-containing materials as well as additional information is provided in Appendix C.
- Floor plans outlining the sample locations and locations of identified asbestos-containing materials is provided in Appendix D.
- Please refer to Sections 4.0 and 6.0 of this report for a summary of the limitations encountered.

### **3.1 Asbestos-Containing Materials**

A total of eighty (80) samples of building materials were collected and tested for asbestos content during the assessment of Essex Plaza. Thirteen (13) of the samples were found to contain asbestos.

#### **3.1.1 List of Identified Asbestos-Containing Materials**

A list of the identified asbestos-containing materials is provided below.

- 12"x12" Off-White Floor Tile with Black Flecks;
- 9"x9" Floor Tile installed on upper plywood ceilings;
- Black Window Caulking;
- Plaster;
- White Window Caulking;
- Drywall Joint Compound;
- 12"x12" Beige Floor Tile with Brown and White Flecks; and
- Grey Window Caulking.

In addition to the above list, the vermiculite insulation located above the solid ceilings throughout the Site should be treated as asbestos-containing until appropriate sampling of the material can be conducted.

Further information on the identified asbestos-containing materials listed is provided below.



### ***12"x12" Off-White Floor Tile with Black Flecks***

Two (2) samples of 12"x12" off-white floor tile with black flecks were collected during the assessment. Both of the samples collected were found to contain trace to 1.8% Chrysotile asbestos. Asbestos-containing 12"x12" off-white floor tile with black flecks (see Photograph 1 in Appendix B) was observed in the following locations:

- Unit 207 (approximately 275 ft<sup>2</sup>); and
- Unit 205 (approximately 125 ft<sup>2</sup>).

Additional asbestos-containing 12"x12" off-white floor tiles with black flecks may be located in concealed locations (below carpeting/other flooring) throughout the Site.

### ***Floor Tile***

One (1) sample of 12"x12" floor tile with an indistinguishable pattern (due to carpet glue) was collected during the assessment. The sample collected was found to contain trace Chrysotile asbestos. Asbestos-containing floor tile (see Photograph 2 in Appendix B) was observed in the following location:

- Unit 205 (approximately 50 ft<sup>2</sup>).

Based upon the laboratory analysis results and the location of the sample, it is suspected that this floor tile is the 12"x12" off-white floor tile with black flecks.

### ***9"x9" Floor Tile on Upper Plywood Ceiling***

One (1) sample of 9"x9" floor tile installed on an upper plywood ceiling was collected during the assessment. The sample collected was found to contain 0.5% Chrysotile asbestos. Asbestos-containing floor tile on an upper plywood ceiling (see Photograph 3 in Appendix B) was observed in the following location:

- Unit 207 (approximately 75 ft<sup>2</sup>).

Additional asbestos-containing 9"x9" floor tile installed on an upper plywood ceiling may be located within the ceiling spaces throughout the Site.

### ***Black Window Caulking***

Seven (7) samples of black window caulking were collected during the assessment. One of the samples collected was found to contain 7.1% Chrysotile asbestos. Asbestos-containing black window caulking (see Photograph 4 in Appendix B) was observed in the following location:

- Unit 207 (approximately 20 linear ft).

The remaining six (6) samples of black window caulking were found to not contain asbestos.



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### **Plaster**

Five (5) samples of plaster were collected during the assessment. Two of the samples collected were found to contain 0.25% to 2.4% Chrysotile asbestos. Asbestos-containing plaster (see Photograph 5 in Appendix B) was observed in the following locations:

- Second Floor and Stairwell, Land Branch (approximately 1,100 ft<sup>2</sup>); and
- Second Floor Tenant Suite (approximately 100 ft<sup>2</sup>).

Based upon our observations during the assessment, the majority of the walls throughout the Site were observed to be drywall. It is suspected that additional plaster is located in concealed locations (behind solid walls, suspended and solid ceilings, shafts, etc.) throughout the Site.

### **White Window Caulking**

One (1) sample of white window caulking was collected during the assessment. The sample collected was found to contain 20% Chrysotile asbestos. Asbestos-containing white window caulking (see Photograph 6 in Appendix B) was observed in the following location:

- Second Floor Tenant Suite (approximately 90 linear ft).

### **Drywall Joint Compound**

Twenty-four (24) samples of drywall joint compound were collected during the assessment. Three of the samples collected were found to contain 1.4% to 2.2% Chrysotile asbestos. Asbestos-containing drywall joint compound (see Photograph 7 in Appendix B) was observed in the following locations:

- Second Floor Tenant Suite (approximately 5,125 ft<sup>2</sup>);
- Basement (approximately 20 ft<sup>2</sup>); and
- Unit 205 (approximately 3,650 ft<sup>2</sup>).

The remaining twenty-one (21) samples of drywall joint compound were found to not contain asbestos. Additional asbestos-containing drywall joint compound may be located above the suspended ceilings throughout the Site.

### **12"x12" Beige Floor Tile with Brown and White Flecks**

One (1) sample of 12"x12" beige floor tile with brown and white flecks was collected during the assessment. The sample collected was found to contain 2.6% Chrysotile asbestos. Asbestos-containing 12"x12" beige floor tile with brown and white flecks was observed in the following location:

- Communications (approximately 135 ft<sup>2</sup>).

Additional asbestos-containing 12"x12" beige floor tile with brown and white flecks may be located in concealed locations (below carpeting/other flooring) throughout the Site.



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### *Grey Window Caulking*

One (1) sample of grey window caulking was collected during the assessment. The sample collected was found to contain 2.1% Chrysotile asbestos. Asbestos-containing grey window caulking (see Photograph 8 in Appendix B) was observed in the following location:

- Unit 205 (approximately 200 linear ft).

### *Vermiculite Insulation*

One (1) sample of loose vermiculite insulation on top of a suspended ceiling tile (see Photograph 9 in Appendix B) was collected during the assessment. The sample collected was found to not contain asbestos, however due to the inability to collect a thorough representative sample of the vermiculite insulation with an adequate volume, the material should be treated as a suspect asbestos-containing materials until further sampling can be conducted. Based upon the observations on Site, suspect asbestos-containing vermiculite is suspected to be located above the solid ceilings throughout the Site. Additionally, sporadic spills of the suspect vermiculite insulation are suspected on the various ceilings throughout the Site.

Following the identification of the vermiculite insulation within the ceiling space, an assessment was conducted by the Client to evaluate the ceiling spaces for further suspect contamination. The areas listed below were inspected for vermiculite. If suspect vermiculite debris was encountered during the inspection, it was subsequently cleaned and all surfaces within the immediate area were encapsulated.

- Rooms 102/103 to 113, Land Branch;
- Hallways 114 to 117, Land Branch;
- Rooms 118 and 119, Land Branch;
- Hallway 120, Land Branch;
- Rooms 121 to 125, Land Branch;
- Rooms 128 and 129, Land Branch;
- Hallway 130, Land Branch;
- Room 131, Land Branch;
- Hallway 132, Land Branch;
- Room 133, Land Branch;
- Room 201, Land Branch;
- Rooms 150 to 153, Communications;
- Room 155, Communications;
- Back Hallway, Communications;
- Room 154, Meter Readers;
- Unit 205;



- Room 100, Transit Bus Mall; and
- Rooms 102 to 121, Transit Bus Mall.

In addition to the above, the ceiling space of the Second Floor Tenant Suite was reportedly renovated previously by the Building Owner and was therefore not assessed by the Client.

### 3.1.2 Historical Asbestos-Containing Materials

#### *Pipe-Fitting Insulation*

Historically the pipe-fitting insulation within the Site has been found to contain asbestos. Due to the limitations encountered with accessing the ceiling space, this could not be confirmed by Golder. Should pipe-fitting insulation be encountered and scheduled for impact, it should be treated as asbestos-containing until further investigation and sampling is conducted.

During the inspection of the ceiling space by the Client, suspect pipe-fitting insulation was encountered and subsequently removed within the following location:

- Room 150, Communications.

### 3.1.3 Non Asbestos-Containing Materials

The following materials were sampled during this assessment and were found to not contain asbestos or were observed to be non-suspect materials:

- Drywall joint compound (excluding the locations above);
- 12"x12" Grey floor tile with white and black flecks;
- 12"x12" Light blue floor tile with blue and white flecks;
- 12"x12" Dark blue floor tile with white flecks;
- 12"x12" Off-white floor tile with brown flecks;
- 12"x12" Off-white floor tile with grey flecks;
- 12"x12" Red floor tile;
- 12"x12" White floor tile;
- 1'x1' Ceiling tile with pinholes;
- 1'x1' Ceiling tile mastic;
- White sink undercoat;
- Black window caulking (excluding the locations above);
- Grey building caulking;
- Grey duct mastic;
- Ceiling texture coat;
- Beige square pattern vinyl sheet flooring;
- Beige mosaic vinyl sheet flooring with turquoise and red flecks;





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- Tan floor mastic;
- Concrete scratch coat;
- 2'x4' Ceiling tile with widthwise fissures;
- Cast iron joint packing;
- Stucco; and
- The 2'x4' ceiling tile with small pinholes and small divots, the 2'x4' textured ceiling tile, and the 2'x4' ceiling tile with circular patterned fissures were date coded to a time period in which asbestos use was not widespread.

### 4.0 EXCLUDED AREAS AND MATERIALS

The following is a list of the areas and/or materials excluded during the assessment.

- Building materials accessible by a ten-foot ladder were assessed by Golder during the assessment. Materials located at heights that were inaccessible from a ten-foot ladder were not assessed. If materials at heights are to be removed or impacted by future renovation or demolition activities, additional investigation and sampling of suspect materials may be required.
- Electrical components were not assessed by Golder during the assessment. If the electrical components are to be removed or impacted by future renovation or demolition activities, additional investigation and sampling of suspect materials may be required.
- Golder was unable to access Room 110 of the Land Branch Unit during the assessment due to locked doors. If work activities are scheduled within this area, further sampling may be required. If building materials within this area are to be removed or impacted by future renovation or demolition activities, additional investigation and sampling of suspect materials may be required.
- Golder was unable to access the ceiling space throughout the Site due to the potential of an unplanned release of suspect asbestos-containing vermiculite insulation. If materials within the ceiling space are to be removed or impacted by future renovation or demolition activities, additional investigation and sampling of suspect materials may be required.
- The roof and associated components were not assessed by Golder during the assessment. If the roof and associated components are to be removed or impacted by future renovation or demolition activities, additional investigation and sampling of suspect materials may be required.



## **5.0 CONCLUSIONS AND RECOMMENDATIONS**

Based on the visual assessment and the laboratory analytical results, the following project specific conclusions and recommendations are provided.

### **5.1 Asbestos-Containing Materials**

Asbestos was positively identified within the 12"x12" off-white floor tile with black flecks, floor tile (indistinguishable pattern), 9"x9" floor tile on upper plywood ceiling, black window caulking, plaster, white window caulking, drywall joint compound, 12"x12" beige floor tile with brown and white flecks, and grey window caulking. Additionally, the vermiculite insulation and pipe-fitting insulation within the ceiling spaces is suspected to contain asbestos. Asbestos was not identified in the remaining samples collected and analyzed.

If the building is scheduled for renovations that will impact the identified asbestos-containing materials, it must be removed. If additional suspect asbestos-containing building materials are encountered during renovation activities, additional sampling should be undertaken to evaluate asbestos content.

Removal work should be completed by workers that are adequately trained in the hazards and proper methods of working with asbestos. Throughout the abatement activities, appropriate air monitoring and inspections should be conducted by a competent person to document that contamination is contained and that ACM are disposed of appropriately. Ensure asbestos waste is disposed of in accordance with the requirements of the Government of Saskatchewan.

All quantities listed in the report are approximate and are based on the conditions at the time of the assessment. Prior to abatement work it is recommended that a competent person conduct a review of the site to quantify and obtain all measurements of all building materials detailed in this report for cost estimating purposes.

In anticipation of potential abatement, Golder's recommendations for the asbestos-containing materials identified during the assessment are outlined below.

#### **12"x12" Off-White Floor Tile with Black Flecks**

If scheduled for impact, asbestos-containing 12"x12" off-white floor tile with black flecks should be abated following low-risk abatement work procedures as outlined in the *Saskatchewan Asbestos Abatement Manual* (2017). Alternatively, as the 12"x12" off-white floor tile with black flecks was observed in good condition, and with a priority rating of 5 (please see the room by room spreadsheet provided in Appendix C for a description of the priority ratings), it can be managed in place if not scheduled for impact.

#### **Floor Tile (Indistinguishable Pattern)**

If scheduled for impact, asbestos-containing floor tile (indistinguishable pattern) should be abated following low-risk abatement work procedures as outlined in the *Saskatchewan Asbestos Abatement Manual* (2017). Alternatively, as the floor tile (indistinguishable pattern) was observed in good condition, and with a priority rating of 5 (please see the room by room spreadsheet provided in Appendix C for a description of the priority ratings), it can be managed in place if not scheduled for impact.



### **9"x9" Floor Tile on Upper Plywood Ceiling**

If scheduled for impact, asbestos-containing 9"x9" floor tile on upper plywood ceiling should be abated following low-risk abatement work procedures as outlined in the *Saskatchewan Asbestos Abatement Manual* (2017). Alternatively, as the 9"x9" floor tile on upper plywood ceiling was observed in good condition, and with a priority rating of 5 (please see the room by room spreadsheet provided in Appendix C for a description of the priority ratings), it can be managed in place if not scheduled for impact.

### **Black Window Caulking**

If scheduled for impact, asbestos-containing black window caulking should be abated following low-risk abatement work procedures as outlined in the *Saskatchewan Asbestos Abatement Manual* (2017). Alternatively, as the black window caulking was observed in good condition, and with a priority rating of 5 (please see the room by room spreadsheet provided in Appendix C for a description of the priority ratings), it can be managed in place if not scheduled for impact.

### **Plaster**

If scheduled for impact, asbestos-containing plaster should be abated following high-risk abatement work procedures as outlined in the *Saskatchewan Asbestos Abatement Manual* (2017). Alternatively, as the plaster was observed in good condition, and with a priority rating of 5 (please see the room by room spreadsheet provided in Appendix C for a description of the priority ratings), it can be managed in place if not scheduled for impact.

### **White Window Caulking**

If scheduled for impact, asbestos-containing white window caulking should be abated following low-risk abatement work procedures as outlined in the *Saskatchewan Asbestos Abatement Manual* (2017). Alternatively, as the white window caulking was observed in good condition, and with a priority rating of 5 (please see the room by room spreadsheet provided in Appendix C for a description of the priority ratings), it can be managed in place if not scheduled for impact.

### **Drywall Joint Compound**

If scheduled for impact, asbestos-containing drywall joint compound should be abated following low-risk abatement work procedures as outlined in the *Saskatchewan Asbestos Abatement Manual* (2017). Alternatively, as the drywall joint compound was observed in good condition, and with a priority rating of 5 (please see the room by room spreadsheet provided in Appendix C for a description of the priority ratings), it can be managed in place if not scheduled for impact.

### **12"x12" Beige Floor Tile with Brown and White Flecks**

If scheduled for impact, asbestos-containing 12"x12" beige floor tile with brown and white flecks should be abated following low-risk abatement work procedures as outlined in the *Saskatchewan Asbestos Abatement Manual* (2017). Alternatively, as the 12"x12" beige floor tile with brown and white flecks was observed in good condition, and with a priority rating of 5 (please see the room by room spreadsheet provided in Appendix C for a description of the priority ratings), it can be managed in place if not scheduled for impact.



### **Grey Window Caulking**

If scheduled for impact, asbestos-containing grey window caulking should be abated following low-risk abatement work procedures as outlined in the *Saskatchewan Asbestos Abatement Manual* (2017). Alternatively, as the grey window caulking was observed in good condition, and with a priority rating of 5 (please see the room by room spreadsheet provided in Appendix C for a description of the priority ratings), it can be managed in place if not scheduled for impact.

### **Vermiculite Insulation**

Appropriate representative sampling of the vermiculite insulation should be conducted to evaluate the presence or absence of asbestos within the material. Until additional sampling is conducted, the material should be treated as asbestos-containing and access into the ceiling spaces throughout the Site should be restricted. Additionally, if the ceiling space is used as a return air plenum, consideration should be given to collecting airborne fibre samples throughout the Site to evaluate the airborne fibre concentrations. Although not a confirmed asbestos-containing material, the vermiculite insulation has been assigned a priority rating of 3 indicating that access to the area with the materials should be restricted and further sampling should be scheduled. Sampling may involve the demolition/abatement of select building materials to facilitate appropriate access to ensure that a sample of the entire material matrix can be collected.

### **Pipe-Fitting Insulation**

If encountered and scheduled for impact, asbestos-containing pipe-fitting insulation should be abated following moderate-risk glovebag or high-risk abatement work procedures as outlined in the *Saskatchewan Asbestos Abatement Manual* (2017).

## **6.0 SURVEY LIMITATIONS**

This report is based on data and information collected by Golder during the assessment conducted on June 17 and 20, 2017 and is based solely on site conditions encountered at the time of the assessment. Any use of this document or the findings, conclusions or recommendations provided in this report by any person other than the City of Saskatoon is at the sole risk of such user.

The conclusions and recommendations contained in this survey 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 dates of the investigations. 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. No assurance is made regarding changes in conditions or practices subsequent to the time of the investigation. It was beyond the scope of this assessment to conduct a risk assessment and the potential health risks that may be associated with asbestos exposure for building occupants.

The data reported and the findings, observations and conclusions expressed in this report are limited by the Scope of Work. The Scope of Work was defined by the request for proposal and the information provided in P1779656, the time and budgetary constraints imposed by the Client, and availability of access to the property.



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Because of the limitations stated above, the findings, observations and conclusions expressed by Golder in this report are not, and must not be, considered an opinion concerning compliance of any past or present owner or operator of the site with any federal, provincial or local laws or regulations.

No warranty or guarantee, whether expressed or implied, is made with respect to the data or the reported findings, observations, and conclusions, which are based solely upon site conditions in existence at the time of investigation.

Golder's assessment reports present professional opinions and findings of a scientific and technical nature. While attempts were made to relate the data and findings to applicable environmental laws and regulations, the report shall not be construed to offer legal opinion or representations as to the requirements of, nor compliance with, environmental laws, rules, regulations or policies of federal, provincial, or local governmental agencies. Any use of the survey report constitutes acceptance of the limits of Golder's liability.

Golder's liability extends only to its client and not to other parties who may obtain this survey report. Issues raised by the report must be reviewed by appropriate legal counsel.

### 7.0 CLOSURE

We trust the information presented in this report meets your requirements. If you have any questions please contact Kody Henderson at (780) 483-3499 or email at [kody\\_henderson@golder.com](mailto:kody_henderson@golder.com). Thank you for the opportunity to be of service. We look forward to working with you again in the future.



## ASBESTOS-CONTAINING BUILDING MATERIALS ASSESSMENT REPORT - ESSEX PLAZA

### Report Signature Page

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KH/AG/ba

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# **APPENDIX A**

## **Laboratory Certificate of Analysis Report**

## CERTIFICATE OF ANALYSIS

**Client:** Golder Associates Ltd  
16820 107 Ave  
Edmonton AB T5P 4C3

**Report Date:** 6/29/2017  
**Report No.:** 539488 - PLM  
**Project:** City of Saskatoon - Essex Plaza  
**Project No.:** 1667963

**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

**Lab No.:** 6271509  
**Client No.:** A-001

**Description:** White Joint Compound  
**Facility:**

**Location:** Unit 207

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271510  
**Client No.:** A-002

**Description:** White Joint Compound  
**Facility:**

**Location:** Unit 207

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271511  
**Client No.:** A-003

**Description:** White Joint Compound  
**Facility:**

**Location:** Unit 207

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271512  
**Client No.:** A-004

**Description:** Lt Grey Floor Tile; 12x12  
**Facility:**

**Location:** Unit 207

Percent Asbestos:  
**PC 1.8 Chrysotile**

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
98.2

**Lab No.:** 6271512(L2)  
**Client No.:** A-004

**Description:** Black/Brown Mastic  
**Facility:**

**Location:** Unit 207

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271513  
**Client No.:** A-005

**Description:** Grey Floor Tile; 12x12  
**Facility:**

**Location:** Unit 207

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

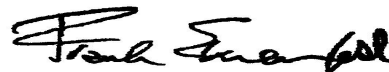
**Date Received:** 6/21/2017

**Date Analyzed:** 06/29/2017

**Signature:**

**Analyst:** Rebecca Hargrove

**Approved By:**



Frank E. Ehrenfeld, III  
Laboratory Director



## CERTIFICATE OF ANALYSIS

**Client:** Golder Associates Ltd  
16820 107 Ave  
Edmonton AB T5P 4C3

**Report Date:** 6/29/2017  
**Report No.:** 539488 - PLM  
**Project:** City of Saskatoon - Essex Plaza  
**Project No.:** 1667963

**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

**Lab No.:** 6271513(L2)  
**Client No.:** A-005

**Description:** Clear Caulk  
**Facility:**

**Location:** Unit 207

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271514  
**Client No.:** A-006

**Description:** Lt Blue Floor Tile; 12x12  
**Facility:**

**Location:** Unit 207

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271515  
**Client No.:** A-007

**Description:** Dk Blue Floor Tile; 12x12  
**Facility:**

**Location:** Unit 207

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271515(L2)  
**Client No.:** A-007

**Description:** Black Mastic  
**Facility:**

**Location:** Unit 207

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271516  
**Client No.:** A-008

**Description:** Tan Vermiculite  
**Facility:**

**Location:** Unit 207

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

This sample contains vermiculite mineral and may be a candidate for additional analytical procedures. Please see the sections following your report titled Recommendations for Vermiculite Analysis. (EPA 600/R-04/004)

**Lab No.:** 6271517  
**Client No.:** A-009

**Description:** Tan/White Ceiling Tile; 1x1  
**Facility:**

**Location:** Unit 207

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
95 Cellulose

Percent Non-Fibrous Material:  
5

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

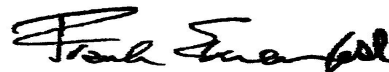
**Date Received:** 6/21/2017

**Date Analyzed:** 06/29/2017

**Signature:**

**Analyst:** Rebecca Hargrove

**Approved By:**



Frank E. Ehrenfeld, III  
Laboratory Director

## CERTIFICATE OF ANALYSIS

**Client:** Golder Associates Ltd  
16820 107 Ave  
Edmonton AB T5P 4C3

**Report Date:** 6/29/2017  
**Report No.:** 539488 - PLM  
**Project:** City of Saskatoon - Essex Plaza  
**Project No.:** 1667963

**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

<b>Lab No.:</b> 6271518	<b>Description:</b> Brown Mastic	<b>Location:</b> Unit 207
<b>Client No.:</b> A-010	<b>Facility:</b>	
<u>Percent Asbestos:</u>	<u>Percent Non-Asbestos Fibrous Material:</u>	<u>Percent Non-Fibrous Material:</u>
<i>None Detected</i>	None Detected	100

<b>Lab No.:</b> 6271519	<b>Description:</b> Tan Floor Tile	<b>Location:</b> Unit 207
<b>Client No.:</b> A-011	<b>Facility:</b>	
<u>Percent Asbestos:</u>	<u>Percent Non-Asbestos Fibrous Material:</u>	<u>Percent Non-Fibrous Material:</u>
<i>PC 0.5 Chrysotile</i>	None Detected	99.5

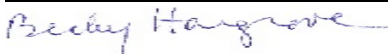
<b>Lab No.:</b> 6271519(L2)	<b>Description:</b> Black Mastic	<b>Location:</b> Unit 207
<b>Client No.:</b> A-011	<b>Facility:</b>	
<u>Percent Asbestos:</u>	<u>Percent Non-Asbestos Fibrous Material:</u>	<u>Percent Non-Fibrous Material:</u>
<i>None Detected</i>	None Detected	100

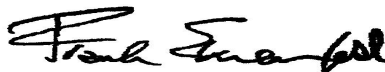
<b>Lab No.:</b> 6271520	<b>Description:</b> Off-White Insulation	<b>Location:</b> Unit 207
<b>Client No.:</b> A-012	<b>Facility:</b>	
<u>Percent Asbestos:</u>	<u>Percent Non-Asbestos Fibrous Material:</u>	<u>Percent Non-Fibrous Material:</u>
<i>None Detected</i>	25 Cellulose	75

<b>Lab No.:</b> 6271521	<b>Description:</b> Grey Putty	<b>Location:</b> Unit 207
<b>Client No.:</b> A-013	<b>Facility:</b>	
<u>Percent Asbestos:</u>	<u>Percent Non-Asbestos Fibrous Material:</u>	<u>Percent Non-Fibrous Material:</u>
<i>PC 7.1 Chrysotile</i>	None Detected	92.9

<b>Lab No.:</b> 6271522	<b>Description:</b> Black Caulk	<b>Location:</b> Room 133; Land Branch
<b>Client No.:</b> A-014	<b>Facility:</b>	
<u>Percent Asbestos:</u>	<u>Percent Non-Asbestos Fibrous Material:</u>	<u>Percent Non-Fibrous Material:</u>
<i>None Detected</i>	None Detected	100

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

**Date Received:** 6/21/2017  
**Date Analyzed:** 06/29/2017  
**Signature:**   
**Analyst:** Rebecca Hargrove

**Approved By:**   
Frank E. Ehrenfeld, III  
Laboratory Director

## CERTIFICATE OF ANALYSIS

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Edmonton AB T5P 4C3

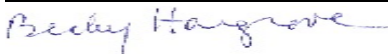
**Report Date:** 6/29/2017  
**Report No.:** 539488 - PLM  
**Project:** City of Saskatoon - Essex Plaza  
**Project No.:** 1667963

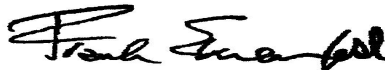
**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

<b>Lab No.:</b> 6271523 <b>Client No.:</b> A-015	<b>Description:</b> Grey Caulk <b>Facility:</b>	<b>Location:</b> Room 133; Land Branch
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 6271524 <b>Client No.:</b> A-016	<b>Description:</b> White Joint Compound <b>Facility:</b>	<b>Location:</b> Hallway 120/122/126/129/130 Hallway; Land Branch
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 6271525 <b>Client No.:</b> A-017	<b>Description:</b> Black Caulk <b>Facility:</b>	<b>Location:</b> Hallway 120/122/126/129/130 Hallway; Land Branch
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> 5 Cellulose	<u>Percent Non-Fibrous Material:</u> 95
<b>Lab No.:</b> 6271526 <b>Client No.:</b> A-018	<b>Description:</b> White Joint Compound <b>Facility:</b>	<b>Location:</b> Room 132; Land Branch
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 6271527 <b>Client No.:</b> A-019	<b>Description:</b> White Joint Compound <b>Facility:</b>	<b>Location:</b> Room 123; Land Branch
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 6271528 <b>Client No.:</b> A-020	<b>Description:</b> White Insulation <b>Facility:</b>	<b>Location:</b> Room 109; Land Branch
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

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**Signature:**   
**Analyst:** Rebecca Hargrove

**Approved By:**   
Frank E. Ehrenfeld, III  
Laboratory Director

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16820 107 Ave  
Edmonton AB T5P 4C3

**Report Date:** 6/29/2017  
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**Project:** City of Saskatoon - Essex Plaza  
**Project No.:** 1667963

**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

**Lab No.:** 6271529  
**Client No.:** A-021

**Description:** White Joint Compound  
**Facility:**

**Location:** Room 109; Land Branch

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271530  
**Client No.:** A-022

**Description:** Black Caulk  
**Facility:**

**Location:** Room 104; Land Branch

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
5 Cellulose

Percent Non-Fibrous Material:  
95

**Lab No.:** 6271531  
**Client No.:** A-023

**Description:** Grey Mastic  
**Facility:**

**Location:** Room 106; Land Branch

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271532  
**Client No.:** A-024

**Description:** White Plaster  
**Facility:**

**Location:** Room 201; Land Branch

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271532(L2)  
**Client No.:** A-024

**Description:** Grey Plaster  
**Facility:**

**Location:** Room 201; Land Branch

Percent Asbestos:  
**PC 0.25 Chrysotile**

Percent Non-Asbestos Fibrous Material:  
Trace Cellulose  
Trace Hair

Percent Non-Fibrous Material:  
99.75

**Lab No.:** 6271533  
**Client No.:** A-025

**Description:** White Ceiling Texture  
**Facility:**

**Location:** Room 200; Land Branch

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

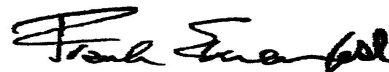
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**Signature:**

**Analyst:** Rebecca Hargrove

**Approved By:**



Frank E. Ehrenfeld, III  
Laboratory Director

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**Project:** City of Saskatoon - Essex Plaza  
**Project No.:** 1667963

**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

<b>Lab No.:</b> 6271534	<b>Description:</b> White Joint Compound	<b>Location:</b> Room 204; Land Branch
<b>Client No.:</b> A-026	<b>Facility:</b>	
<u>Percent Asbestos:</u>	<u>Percent Non-Asbestos Fibrous Material:</u>	<u>Percent Non-Fibrous Material:</u>
<i>None Detected</i>	None Detected	100

<b>Lab No.:</b> 6271535	<b>Description:</b> White Ceiling Texture	<b>Location:</b> Room 204; Land Branch
<b>Client No.:</b> A-027	<b>Facility:</b>	
<u>Percent Asbestos:</u>	<u>Percent Non-Asbestos Fibrous Material:</u>	<u>Percent Non-Fibrous Material:</u>
<i>None Detected</i>	None Detected	100

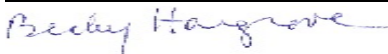
<b>Lab No.:</b> 6271536	<b>Description:</b> Off-White Joint Compound	<b>Location:</b> Room 202; Land Branch
<b>Client No.:</b> A-028	<b>Facility:</b>	
<u>Percent Asbestos:</u>	<u>Percent Non-Asbestos Fibrous Material:</u>	<u>Percent Non-Fibrous Material:</u>
<i>None Detected</i>	None Detected	100

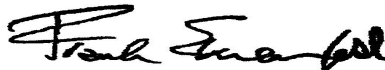
<b>Lab No.:</b> 6271536(L2)	<b>Description:</b> White Plaster	<b>Location:</b> Room 202; Land Branch
<b>Client No.:</b> A-028	<b>Facility:</b>	
<u>Percent Asbestos:</u>	<u>Percent Non-Asbestos Fibrous Material:</u>	<u>Percent Non-Fibrous Material:</u>
<i>None Detected</i>	None Detected	100

<b>Lab No.:</b> 6271536(L3)	<b>Description:</b> Grey Plaster	<b>Location:</b> Room 202; Land Branch
<b>Client No.:</b> A-028	<b>Facility:</b>	
<u>Percent Asbestos:</u>	<u>Percent Non-Asbestos Fibrous Material:</u>	<u>Percent Non-Fibrous Material:</u>
<i>None Detected</i>	Trace Cellulose Trace Hair	100

<b>Lab No.:</b> 6271537	<b>Description:</b> White Joint Compound	<b>Location:</b> Room 202; Land Branch
<b>Client No.:</b> A-029	<b>Facility:</b>	
<u>Percent Asbestos:</u>	<u>Percent Non-Asbestos Fibrous Material:</u>	<u>Percent Non-Fibrous Material:</u>
<i>None Detected</i>	None Detected	100

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

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**Analyst:** Rebecca Hargrove

**Approved By:**   
Frank E. Ehrenfeld, III  
Laboratory Director

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16820 107 Ave  
Edmonton AB T5P 4C3

**Report Date:** 6/29/2017  
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**Project:** City of Saskatoon - Essex Plaza  
**Project No.:** 1667963

**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

**Lab No.:** 6271537(L2)  
**Client No.:** A-029

Percent Asbestos:  
*None Detected*

**Description:** White Plaster  
**Facility:**

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 202; Land Branch

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271537(L3)  
**Client No.:** A-029

Percent Asbestos:  
*None Detected*

**Description:** Grey Plaster  
**Facility:**

Percent Non-Asbestos Fibrous Material:  
Trace Hair

**Location:** Room 202; Land Branch

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271538  
**Client No.:** A-030

Percent Asbestos:  
*None Detected*

**Description:** White Joint Compound  
**Facility:**

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 202; Land Branch

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271539  
**Client No.:** A-031

Percent Asbestos:  
*None Detected*

**Description:** White Ceiling Texture  
**Facility:**

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 202; Land Branch

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271540  
**Client No.:** A-032

Percent Asbestos:  
*None Detected*

**Description:** White Joint Compound  
**Facility:**

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Stairwell; Land Branch

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271540(L2)  
**Client No.:** A-032

Percent Asbestos:  
*None Detected*

**Description:** Grey Plaster  
**Facility:**

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Stairwell; Land Branch

Percent Non-Fibrous Material:  
100

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

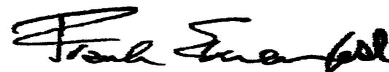
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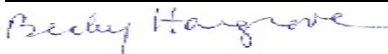
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**Project:** City of Saskatoon - Essex Plaza  
**Project No.:** 1667963

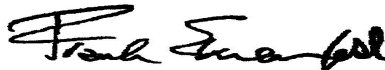
**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

<b>Lab No.:</b> 6271541 <b>Client No.:</b> A-033	<b>Description:</b> White Joint Compound <b>Facility:</b>	<b>Location:</b> Stairwell; Land Branch
<u>Percent Asbestos:</u> None Detected	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 6271542 <b>Client No.:</b> A-034	<b>Description:</b> White Joint Compound <b>Facility:</b>	<b>Location:</b> Room G-4; 234 23rd St E Upper Level
<u>Percent Asbestos:</u> None Detected	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 6271543 <b>Client No.:</b> A-035	<b>Description:</b> Off-White Vinyl Sheet Flooring <b>Facility:</b>	<b>Location:</b> Room G-4; 234 23rd St E Upper Level
<u>Percent Asbestos:</u> None Detected	<u>Percent Non-Asbestos Fibrous Material:</u> 20 Cellulose	<u>Percent Non-Fibrous Material:</u> 80
<b>Lab No.:</b> 6271543(L2) <b>Client No.:</b> A-035	<b>Description:</b> Tan Mastic <b>Facility:</b>	<b>Location:</b> Room G-4; 234 23rd St E Upper Level
<u>Percent Asbestos:</u> None Detected	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 6271544 <b>Client No.:</b> A-036	<b>Description:</b> Tan Joint Compound <b>Facility:</b>	<b>Location:</b> Room G-3; 234 23rd St E Upper Level
<u>Percent Asbestos:</u> <b>PC 2.4 Chrysotile</b>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 97.6
<b>Lab No.:</b> 6271544(L2) <b>Client No.:</b> A-036	<b>Description:</b> White Plaster <b>Facility:</b>	<b>Location:</b> Room G-3; 234 23rd St E Upper Level
<u>Percent Asbestos:</u> None Detected	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

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**Analyst:** Rebecca Hargrove

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Frank E. Ehrenfeld, III  
Laboratory Director

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16820 107 Ave  
Edmonton AB T5P 4C3

**Report Date:** 6/29/2017  
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**Project:** City of Saskatoon - Essex Plaza  
**Project No.:** 1667963

**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

**Lab No.:** 6271544(L3)  
**Client No.:** A-036

Percent Asbestos:  
*None Detected*

**Description:** Grey Plaster  
**Facility:**

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room G-3; 234 23rd St E Upper Level

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271545  
**Client No.:** A-037

Percent Asbestos:  
*20 Chrysotile*

**Description:** Grey Putty  
**Facility:**

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room G-2; 234 23rd St E Upper Level

Percent Non-Fibrous Material:  
80

**Lab No.:** 6271546  
**Client No.:** A-038

Percent Asbestos:  
*None Detected*

**Description:** White Joint Compound  
**Facility:**

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room G-5; 234 23rd St E Upper Level

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271547  
**Client No.:** A-039

Percent Asbestos:  
*PC 1.6 Chrysotile*

**Description:** Tan Joint Compound  
**Facility:**

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room G-3; 234 23rd St E Upper Level

Percent Non-Fibrous Material:  
98.4

**Lab No.:** 6271548  
**Client No.:** A-040

Percent Asbestos:  
*None Detected*

**Description:** Beige Floor Tile  
**Facility:**

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Stairwell; 234 23rd St E Upper Level

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271549  
**Client No.:** A-041

Percent Asbestos:  
*None Detected*

**Description:** White Joint Compound  
**Facility:**

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 150; Communications

Percent Non-Fibrous Material:  
100

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

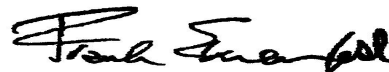
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**Project:** City of Saskatoon - Essex Plaza  
**Project No.:** 1667963

**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

<b>Lab No.:</b> 6271550	<b>Description:</b> White Joint Compound	<b>Location:</b> Room 150; Communications
<b>Client No.:</b> A-042	<b>Facility:</b>	
<u>Percent Asbestos:</u>	<u>Percent Non-Asbestos Fibrous Material:</u>	<u>Percent Non-Fibrous Material:</u>
<i>None Detected</i>	None Detected	100

<b>Lab No.:</b> 6271551	<b>Description:</b> Black Caulk	<b>Location:</b> Room 150; Communications
<b>Client No.:</b> A-043	<b>Facility:</b>	
<u>Percent Asbestos:</u>	<u>Percent Non-Asbestos Fibrous Material:</u>	<u>Percent Non-Fibrous Material:</u>
<i>None Detected</i>	5 Cellulose	95

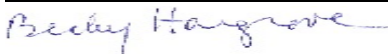
<b>Lab No.:</b> 6271552	<b>Description:</b> White Joint Compound	<b>Location:</b> Room 152; Communications
<b>Client No.:</b> A-044	<b>Facility:</b>	
<u>Percent Asbestos:</u>	<u>Percent Non-Asbestos Fibrous Material:</u>	<u>Percent Non-Fibrous Material:</u>
<i>None Detected</i>	None Detected	100

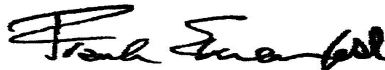
<b>Lab No.:</b> 6271553	<b>Description:</b> Beige Floor Tile; 12x12	<b>Location:</b> Room 152; Communications
<b>Client No.:</b> A-045	<b>Facility:</b>	
<u>Percent Asbestos:</u>	<u>Percent Non-Asbestos Fibrous Material:</u>	<u>Percent Non-Fibrous Material:</u>
<i>PC 2.6 Chrysotile</i>	None Detected	97.4

<b>Lab No.:</b> 6271553(L2)	<b>Description:</b> Tan Mastic	<b>Location:</b> Room 152; Communications
<b>Client No.:</b> A-045	<b>Facility:</b>	
<u>Percent Asbestos:</u>	<u>Percent Non-Asbestos Fibrous Material:</u>	<u>Percent Non-Fibrous Material:</u>
<i>None Detected</i>	None Detected	100

<b>Lab No.:</b> 6271554	<b>Description:</b> Tan Plaster	<b>Location:</b> Back Hallway
<b>Client No.:</b> A-046	<b>Facility:</b>	
<u>Percent Asbestos:</u>	<u>Percent Non-Asbestos Fibrous Material:</u>	<u>Percent Non-Fibrous Material:</u>
<i>None Detected</i>	None Detected	100

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

**Date Received:** 6/21/2017  
**Date Analyzed:** 06/29/2017  
**Signature:**   
**Analyst:** Rebecca Hargrove

**Approved By:**   
Frank E. Ehrenfeld, III  
Laboratory Director

## CERTIFICATE OF ANALYSIS

**Client:** Golder Associates Ltd  
16820 107 Ave  
Edmonton AB T5P 4C3

**Report Date:** 6/29/2017  
**Report No.:** 539488 - PLM  
**Project:** City of Saskatoon - Essex Plaza  
**Project No.:** 1667963

**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

<b>Lab No.:</b> 6271555	<b>Description:</b> Tan Plaster	<b>Location:</b> Back Hallway
<b>Client No.:</b> A-047	<b>Facility:</b>	
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

<b>Lab No.:</b> 6271556	<b>Description:</b> Tan Plaster	<b>Location:</b> Back Hallway
<b>Client No.:</b> A-048	<b>Facility:</b>	
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

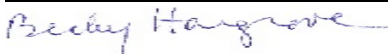
<b>Lab No.:</b> 6271557	<b>Description:</b> White Joint Compound	<b>Location:</b> Back Hallway
<b>Client No.:</b> A-049	<b>Facility:</b>	
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

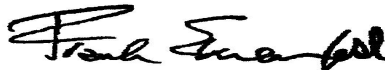
<b>Lab No.:</b> 6271558	<b>Description:</b> Grey/White Ceiling Tile; 2x4	<b>Location:</b> Back Hallway
<b>Client No.:</b> A-050	<b>Facility:</b>	
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> 50 Cellulose 30 Fibrous Glass	<u>Percent Non-Fibrous Material:</u> 20

<b>Lab No.:</b> 6271559	<b>Description:</b> Grey/White Ceiling Tile; 2x4	<b>Location:</b> Back Hallway
<b>Client No.:</b> A-051	<b>Facility:</b>	
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> 50 Cellulose 30 Fibrous Glass	<u>Percent Non-Fibrous Material:</u> 20

<b>Lab No.:</b> 6271560	<b>Description:</b> Grey/White Ceiling Tile; 2x4	<b>Location:</b> Back Hallway
<b>Client No.:</b> A-052	<b>Facility:</b>	
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> 50 Cellulose 30 Fibrous Glass	<u>Percent Non-Fibrous Material:</u> 20

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

**Date Received:** 6/21/2017  
**Date Analyzed:** 06/29/2017  
**Signature:**   
**Analyst:** Rebecca Hargrove

**Approved By:**   
Frank E. Ehrenfeld, III  
Laboratory Director

## CERTIFICATE OF ANALYSIS

**Client:** Golder Associates Ltd  
16820 107 Ave  
Edmonton AB T5P 4C3

**Report Date:** 6/29/2017  
**Report No.:** 539488 - PLM  
**Project:** City of Saskatoon - Essex Plaza  
**Project No.:** 1667963

**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

**Lab No.:** 6271561  
**Client No.:** A-053

**Description:** White Floor Tile; 12x12  
**Facility:**

**Location:** Back Hallway

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271562  
**Client No.:** A-054

**Description:** White Joint Compound  
**Facility:**

**Location:** Room 154; Meter Readers

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271563  
**Client No.:** A-055

**Description:** Off-White/Blue Vinyl Sheet  
Flooring  
**Facility:**

**Location:** Room 115; Transit Bus Mall

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
20 Cellulose  
2 Fibrous Glass

Percent Non-Fibrous Material:  
78

**Lab No.:** 6271564  
**Client No.:** A-056

**Description:** White Joint Compound  
**Facility:**

**Location:** Room 115; Transit Bus Mall

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271565  
**Client No.:** A-057

**Description:** White Joint Compound  
**Facility:**

**Location:** Room 119; Transit Bus Mall

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271566  
**Client No.:** A-058

**Description:** Grey/White Ceiling Tile; 2x4  
**Facility:**

**Location:** Room 120/121; Transit Bus Mall

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
55 Fibrous Glass  
30 Cellulose

Percent Non-Fibrous Material:  
15

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

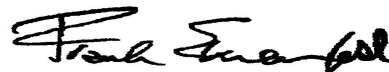
**Date Received:** 6/21/2017

**Date Analyzed:** 06/29/2017

**Signature:**

**Analyst:** Rebecca Hargrove

**Approved By:**



Frank E. Ehrenfeld, III  
Laboratory Director

## CERTIFICATE OF ANALYSIS

**Client:** Golder Associates Ltd  
16820 107 Ave  
Edmonton AB T5P 4C3

**Report Date:** 6/29/2017  
**Report No.:** 539488 - PLM  
**Project:** City of Saskatoon - Essex Plaza  
**Project No.:** 1667963

**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

<b>Lab No.:</b> 6271567 <b>Client No.:</b> A-059	<b>Description:</b> Black Caulk <b>Facility:</b>	<b>Location:</b> Room 120/121; Transit Bus Mall
<u>Percent Asbestos:</u> None Detected	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

<b>Lab No.:</b> 6271568 <b>Client No.:</b> A-060	<b>Description:</b> Off-White Non-Fibrous <b>Facility:</b>	<b>Location:</b> Basement
<u>Percent Asbestos:</u> None Detected	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

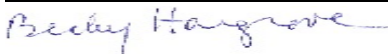
<b>Lab No.:</b> 6271569 <b>Client No.:</b> A-061	<b>Description:</b> Off-White Joint Compound <b>Facility:</b>	<b>Location:</b> Basement
<u>Percent Asbestos:</u> <i>PC 2.2 Chrysotile</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 97.8

<b>Lab No.:</b> 6271570 <b>Client No.:</b> A-062	<b>Description:</b> Off-White Cementitious <b>Facility:</b>	<b>Location:</b> Exterior
<u>Percent Asbestos:</u> None Detected	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

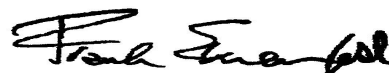
<b>Lab No.:</b> 6271571 <b>Client No.:</b> A-063	<b>Description:</b> Grey/White Cementitious <b>Facility:</b>	<b>Location:</b> Exterior
<u>Percent Asbestos:</u> None Detected	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

<b>Lab No.:</b> 6271572 <b>Client No.:</b> A-064	<b>Description:</b> Grey/White Cementitious <b>Facility:</b>	<b>Location:</b> Exterior
<u>Percent Asbestos:</u> None Detected	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

**Date Received:** 6/21/2017  
**Date Analyzed:** 06/29/2017  
**Signature:**   
**Analyst:** Rebecca Hargrove

**Approved By:**



Frank E. Ehrenfeld, III  
Laboratory Director

## CERTIFICATE OF ANALYSIS

**Client:** Golder Associates Ltd  
16820 107 Ave  
Edmonton AB T5P 4C3

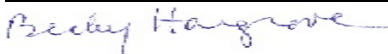
**Report Date:** 6/29/2017  
**Report No.:** 539488 - PLM  
**Project:** City of Saskatoon - Essex Plaza  
**Project No.:** 1667963

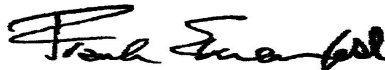
**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

<b>Lab No.:</b> 6271573 <b>Client No.:</b> A-065	<b>Description:</b> Grey/White Cementitious <b>Facility:</b>	<b>Location:</b> Front; Exterior
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 6271574 <b>Client No.:</b> A-066	<b>Description:</b> Grey Cementitious <b>Facility:</b>	<b>Location:</b> Front; Exterior
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 6271575 <b>Client No.:</b> A-067	<b>Description:</b> Grey/White Cementitious <b>Facility:</b>	<b>Location:</b> Back; Exterior
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 6271576 <b>Client No.:</b> A-068	<b>Description:</b> Grey/White Cementitious <b>Facility:</b>	<b>Location:</b> Back; Exterior
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 6271577 <b>Client No.:</b> A-069	<b>Description:</b> Grey/White Cementitious <b>Facility:</b>	<b>Location:</b> Back; Exterior
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 6271578 <b>Client No.:</b> A-070	<b>Description:</b> Grey Caulk <b>Facility:</b>	<b>Location:</b> Exterior
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

**Date Received:** 6/21/2017  
**Date Analyzed:** 06/29/2017  
**Signature:**   
**Analyst:** Rebecca Hargrove

**Approved By:**   
Frank E. Ehrenfeld, III  
Laboratory Director

## CERTIFICATE OF ANALYSIS

**Client:** Golder Associates Ltd  
16820 107 Ave  
Edmonton AB T5P 4C3

**Report Date:** 6/29/2017  
**Report No.:** 539488 - PLM  
**Project:** City of Saskatoon - Essex Plaza  
**Project No.:** 1667963

**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

**Lab No.:** 6271579  
**Client No.:** A-071

Percent Asbestos:  
*None Detected*

**Description:** Black Non-Fibrous  
**Facility:**

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Exterior

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271580  
**Client No.:** A-072

Percent Asbestos:  
*None Detected*

**Description:** Grey Cementitious  
**Facility:**

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Front; Exterior

Percent Non-Fibrous Material:  
100

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

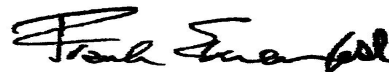
**Date Received:** 6/21/2017

**Date Analyzed:** 06/29/2017

**Signature:**

**Analyst:** Rebecca Hargrove

**Approved By:**



Frank E. Ehrenfeld, III  
Laboratory Director



## CERTIFICATE OF ANALYSIS

**Client:** Golder Associates Ltd  
16820 107 Ave  
Edmonton AB T5P 4C3

**Report Date:** 6/29/2017  
**Report No.:** 539488 - PLM  
**Project:** City of Saskatoon - Essex Plaza  
**Project No.:** 1667963

**Client:** GOL572

### Appendix to Analytical Report

**Customer Contact:**

**Analysis:** US EPA 600, R93-116

This appendix seeks to promote greater understanding of any observations, exceptions, special instructions, or circumstances that the laboratory needs to communicate to the client concerning the above samples. The information below is used to help promote your ability to make the most informed decisions for you and your customers. Please note the following points of contact for any questions you may have.

**iATL Customer Service:** customerservice@iatl.com

**iATL Office Manager:** cdavis@iatl.com

**iATL Account Representative:** Pete Lesniak

**Sample Login Notes:** See Batch Sheet Attached

**Sample Matrix:** Bulk Building Materials

**Exceptions Noted:** See Following Pages

#### General Terms, Warrants, Limits, Qualifiers:

General information about iATL capabilities and client/laboratory relationships and responsibilities are spelled out in iATL policies that are listed at [www.iATL.com](http://www.iATL.com) and in our Quality Assurance Manual per ISO 17025 standard requirements. The information therein is a representation of iATL definitions and policies for turnaround times, sample submittal, collection media, blank definitions, quantification issues and limit of detection, analytical methods and procedures, sub-contracting policies, results reporting options, fees, terms, and discounts, confidentiality, sample archival and disposal, and data interpretation.

iATL warrants the test results to be of a precision normal for the type and methodology employed for each sample submitted. iATL disclaims any other warrants, expressed or implied, including warranty of fitness for a particular purpose and warranty of merchantability. iATL accepts no legal responsibility for the purpose for which the client uses test results. Any analytical work performed must be governed by our Standard Terms and Conditions. Prices, methods and detection limits may be changed without notification. Please contact your Customer Service Representative for the most current information.

This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA LAP LLC, or any agency of local, state or province governments nor of any agency of the U.S. government.

This report shall not be reproduced except in full, without written approval of the laboratory.

#### Information Pertinent to this Report:

Analysis by US EPA 600 93-116: Determination of Asbestos in Bulk Building Materials by Polarized Light Microscopy (PLM).

#### Certifications:

- NIST-NVLAP No. 101165-0
- NY-DOH No. 11021
- AIHA-LAP, LLC No. 100188

Quantification at <0.25% by volume is possible with this method. (PC) Indicates Stratified Point Count Method performed. (PC-Trace) means that asbestos was detected but is not quantifiable under the Point Counting regimen. Analysis includes all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed (ex. analyze until positive instructions). Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, PLM is not consistently reliable in detecting asbestos in non-friable organically bound (NOB) materials. Quantitative transmission electron microscopy (TEM) is currently the only method that can pronounce materials as non-asbestos containing.

Analytical Methodology Alternatives: Your initial request for analysis may not have accounted for recent advances in regulatory requirements or advances in technology that are routinely used in similar situations for other qualified projects. You may have the option to explore additional analysis for further information. Below are a few options, listed as the matrix followed by the appropriate methodology. Also included are links to more information on our website.

Bulk Building Materials that are Non-Friable Organically Bound (NOB) by Gravimetric Reduction techniques employing PLM and TEM: ELAP 198.6 (PLM-NOB), ELAP 198.4 (TEM-NOB)

Loose Fill Vermiculite Insulation, Attic Insulation, Zonolite (copyright), etc.: US EPA 600 R-4/004 (multi-tiered analytical process)  
Sprayed On Insulation/Fireproofing with Vermiculite (SOF-V): ELAP 198.8 (PLM-SOF-V)>

Soil, sludge, sediment, aggregate, and like materials analyzed for asbestos or other elongated mineral particles (ex. erionite, etc.): ASTM D7521, CARB 435, and other options available

## CERTIFICATE OF ANALYSIS

**Client:** Golder Associates Ltd  
16820 107 Ave  
Edmonton AB T5P 4C3

**Report Date:** 6/29/2017  
**Report No.:** 539488 - PLM  
**Project:** City of Saskatoon - Essex Plaza  
**Project No.:** 1667963

**Client:** GOL572

Asbestos in Surface Dust according to one of ASTM's Methods (very dependent on sampling collection technique – by TEM): ASTM D 5755, D5756, or D6480

Various other asbestos matrices (air, water, etc.) and analytical methods are available.

### Disclaimers / Qualifiers:

There may be some samples in this project that have a "NOTE:" associated with a sample result. We use added disclaimers or qualifiers to inform the client about something that requires further explanation. Here is a list with highlighted disclaimers that may be pertinent to this project. For a full explanation of these and other disclaimers, please inquire at [customerservice@iatl.com](mailto:customerservice@iatl.com).

- 1) Note: No mastic provided for analysis.
- 2) Note: Insufficient mastic provided for analysis.
- 3) Note: Insufficient material provided for analysis.
- 4) Note: Insufficient sample provided for QC reanalysis.
- 5) Note: Different material than indicated on Sample Log / Description.
- 6) Note: Sample not submitted.
- 7) Note: Attached to asbestos containing material.
- 8) Note: Received wet.
- 9) Note: Possible surface contamination.
- 10) Note: Not building material. 1% threshold may not apply.
- 11) Note: Recommend TEM-NOB analysis as per EPA recommendations.
- 12) Note: Asbestos detected but not quantifiable.
- 13) Note: Multiple identical samples submitted, only one analyzed.
- 14) Note: Analyzed by EPA 600/R-93/116. Point Counting detection limit at 0.080%.
- 15) Note: Analyzed by EPA 600/R-93/116. Point Counting detection limit at 0.125%.

### Recommendations for Vermiculite Analysis:

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gangue, homogeneous exfoliated books of mica, or mixed mineral composites). Please contact your client representative for pricing and turnaround time options available.

iATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004).

Further information on this method and other vermiculite and asbestos issues can be found at the following: Agency for Toxic Substances and Disease Registry (ATSDR) [www.atsdr.cdc.gov](http://www.atsdr.cdc.gov), United States Geological Survey (USGS) [www.minerals.usgs.gov/minerals/](http://www.minerals.usgs.gov/minerals/), US EPA [www.epa.gov/asbestos](http://www.epa.gov/asbestos). The USEPA also has an informative brochure "Current Best Practices for Vermiculite Attic Insulation" EPA 747F03001 May 2003, that may assist the health and remediation professional.

The following is a summary of the analytical process outlines in the EPA 600/R-04/004 Method:

- 1) **Analytical Step/Method:** Initial Screening by PLM, EPA 600R-93/116  
**Requirements/Comments:** Minimum of 0.1 g of sample. ~0.25% LOQ for most samples.
- 2) **Analytical Step/Method:** Wet Separation by PLM Gravimetric Technique, EPA R-04/004  
**Requirements/Comments:** Minimum 50g\*\* of dry sample. Analysis of "Sinks" only.
- 3) **Analytical Step/Method:** Wet Separation by PLM Gravimetric Technique, EPA R-04/004  
**Requirements/Comments:** Minimum 50g\*\* of dry sample. Analysis of "Floats" only.
- 4) **Analytical Step/Method:** Wet Separation by TEM Gravimetric Technique, EPA R-04/004  
**Requirements/Comments:** Minimum 50g\*\* of dry sample. Analysis of "Sinks" only.
- 5) **Analytical Step/Method:** Wet Separation by TEM Gravimetric Technique, EPA R-04/004  
**Requirements/Comments:** Minimum 50g\*\* of dry sample. Analysis of "Suspension" only.

LOQ, Limit of Quantitation estimates for mass and volume analyses.

\*With advance notice and confirmation by the laboratory.

\*\*Approximately 1 Liter of sample in double-bagged container (~9x6 inch bag of sample).



## CERTIFICATE OF ANALYSIS

**Client:** Golder Associates Ltd  
16820 107 Ave  
Edmonton AB T5P 4C3


**Report Date:** 7/3/2017  
**Report No.:** 539904 - PLM  
**Project:** City of Saskatoon - Essex Plaza  
**Project No.:** 1667963

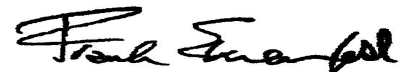
**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

<b>Lab No.:</b> 6271180 <b>Client No.:</b> A-073 <u>Percent Asbestos:</u> <i>None Detected</i>	<b>Analyst Observation:</b> Red Floor Tile; 12x12 <b>Client Description:</b> 12x12 Red Floor Tile <u>Percent Non-Asbestos Fibrous Material:</u> Trace Synthetic	<b>Location:</b> Unit 205 <b>Facility:</b> <u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 6271181 <b>Client No.:</b> A-074 <u>Percent Asbestos:</u> <i>None Detected</i>	<b>Analyst Observation:</b> White Floor Tile; 12x12 <b>Client Description:</b> 12x12 White Floor Tile <u>Percent Non-Asbestos Fibrous Material:</u> 2 Synthetic	<b>Location:</b> Unit 205 <b>Facility:</b> <u>Percent Non-Fibrous Material:</u> 98
<b>Lab No.:</b> 6271181(L2) <b>Client No.:</b> A-074 <u>Percent Asbestos:</u> <i>None Detected</i>	<b>Analyst Observation:</b> Black/Brown Mastic <b>Client Description:</b> 12x12 White Floor Tile <u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<b>Location:</b> Unit 205 <b>Facility:</b> <u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 6271182 <b>Client No.:</b> A-075 <u>Percent Asbestos:</u> <i>PC 2.1 Chrysotile</i>	<b>Analyst Observation:</b> Grey Putty <b>Client Description:</b> Grey Window Caulk <u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<b>Location:</b> Unit 205 <b>Facility:</b> <u>Percent Non-Fibrous Material:</u> 97.9
<b>Lab No.:</b> 6271183 <b>Client No.:</b> A-076 <u>Percent Asbestos:</u> <i>None Detected</i>	<b>Analyst Observation:</b> White Joint Compound <b>Client Description:</b> Drywall Joint Compound <u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<b>Location:</b> Unit 205 <b>Facility:</b> <u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 6271184 <b>Client No.:</b> A-077 <u>Percent Asbestos:</u> <i>None Detected</i>	<b>Analyst Observation:</b> White Joint Compound <b>Client Description:</b> Drywall Joint Compound <u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<b>Location:</b> Unit 205 <b>Facility:</b> <u>Percent Non-Fibrous Material:</u> 100
<b>Lab No.:</b> 6271185 <b>Client No.:</b> A-078 <u>Percent Asbestos:</u> <i>PC Trace Chrysotile</i>	<b>Analyst Observation:</b> White Floor Tile; 12x12 <b>Client Description:</b> 12x12 Off-White Floor Tile With Black Flecks <u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<b>Location:</b> Unit 205 <b>Facility:</b> <u>Percent Non-Fibrous Material:</u> 100

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

**Date Received:** 6/26/2017  
**Date Analyzed:** 07/03/2017  
**Signature:**   
**Analyst:** Muhammad Mirza

**Approved By:**   
Frank E. Ehrenfeld, III  
Laboratory Director

## CERTIFICATE OF ANALYSIS

**Client:** Golder Associates Ltd  
16820 107 Ave  
Edmonton AB T5P 4C3

**Report Date:** 7/3/2017  
**Report No.:** 539904 - PLM  
**Project:** City of Saskatoon - Essex Plaza  
**Project No.:** 1667963

**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

**Lab No.:** 6271185(L2)  
**Client No.:** A-078

**Analyst Observation:** Black/Tan Mastic  
**Client Description:** 12x12 Off-White Floor Tile With Black Flecks

**Location:** Unit 205  
**Facility:**

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271186  
**Client No.:** A-079

**Analyst Observation:** Lt Grey Floor Tile  
**Client Description:** Floor Tile Below Carpet

**Location:** Unit 205  
**Facility:**

Percent Asbestos:  
*PC Trace Chrysotile*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271186(L2)  
**Client No.:** A-079

**Analyst Observation:** Tan Mastic  
**Client Description:** Floor Tile Below Carpet

**Location:** Unit 205  
**Facility:**

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271186(L3)  
**Client No.:** A-079

**Analyst Observation:** Black Mastic  
**Client Description:** Floor Tile Below Carpet

**Location:** Unit 205  
**Facility:**

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6271187  
**Client No.:** A-080

**Analyst Observation:** White Joint Compound  
**Client Description:** Drywall Joint Compound

**Location:** Unit 205  
**Facility:**

Percent Asbestos:  
*PC 1.4 Chrysotile*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
98.6

Analytical Method -US EPA 600, R93-116. Please refer to the Appendix of this report for further information regarding your analysis.

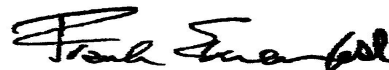
**Date Received:** 6/26/2017

**Date Analyzed:** 07/03/2017

**Signature:**

**Analyst:** Muhammad Mirza

**Approved By:**



Frank E. Ehrenfeld, III  
Laboratory Director

## CERTIFICATE OF ANALYSIS

**Client:** Golder Associates Ltd  
16820 107 Ave  
Edmonton AB T5P 4C3

**Report Date:** 7/3/2017  
**Report No.:** 539904 - PLM  
**Project:** City of Saskatoon - Essex Plaza  
**Project No.:** 1667963

**Client:** GOL572

### Appendix to Analytical Report

**Customer Contact:**

**Analysis:** US EPA 600, R93-116

This appendix seeks to promote greater understanding of any observations, exceptions, special instructions, or circumstances that the laboratory needs to communicate to the client concerning the above samples. The information below is used to help promote your ability to make the most informed decisions for you and your customers. Please note the following points of contact for any questions you may have.

**iATL Customer Service:** customerservice@iatl.com

**iATL Office Manager:** cdavis@iatl.com

**iATL Account Representative:** Pete Lesniak

**Sample Login Notes:** See Batch Sheet Attached

**Sample Matrix:** Bulk Building Materials

**Exceptions Noted:** See Following Pages

#### General Terms, Warrants, Limits, Qualifiers:

General information about iATL capabilities and client/laboratory relationships and responsibilities are spelled out in iATL policies that are listed at [www.iATL.com](http://www.iATL.com) and in our Quality Assurance Manual per ISO 17025 standard requirements. The information therein is a representation of iATL definitions and policies for turnaround times, sample submittal, collection media, blank definitions, quantification issues and limit of detection, analytical methods and procedures, sub-contracting policies, results reporting options, fees, terms, and discounts, confidentiality, sample archival and disposal, and data interpretation.

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This report shall not be reproduced except in full, without written approval of the laboratory.

#### Information Pertinent to this Report:

Analysis by US EPA 600 93-116: Determination of Asbestos in Bulk Building Materials by Polarized Light Microscopy (PLM).

#### Certifications:

- NIST-NVLAP No. 101165-0
- NY-DOH No. 11021
- AIHA-LAP, LLC No. 100188

Quantification at <0.25% by volume is possible with this method. (PC) Indicates Stratified Point Count Method performed. (PC-Trace) means that asbestos was detected but is not quantifiable under the Point Counting regimen. Analysis includes all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed (ex. analyze until positive instructions). Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, PLM is not consistently reliable in detecting asbestos in non-friable organically bound (NOB) materials. Quantitative transmission electron microscopy (TEM) is currently the only method that can pronounce materials as non-asbestos containing.

Analytical Methodology Alternatives: Your initial request for analysis may not have accounted for recent advances in regulatory requirements or advances in technology that are routinely used in similar situations for other qualified projects. You may have the option to explore additional analysis for further information. Below are a few options, listed as the matrix followed by the appropriate methodology. Also included are links to more information on our website.

Bulk Building Materials that are Non-Friable Organically Bound (NOB) by Gravimetric Reduction techniques employing PLM and TEM: ELAP 198.6 (PLM-NOB), ELAP 198.4 (TEM-NOB)

Loose Fill Vermiculite Insulation, Attic Insulation, Zonolite (copyright), etc.: US EPA 600 R-4/004 (multi-tiered analytical process)  
Sprayed On Insulation/Fireproofing with Vermiculite (SOF-V): ELAP 198.8 (PLM-SOF-V)>

Soil, sludge, sediment, aggregate, and like materials analyzed for asbestos or other elongated mineral particles (ex. erionite, etc.): ASTM D7521, CARB 435, and other options available

## CERTIFICATE OF ANALYSIS

**Client:** Golder Associates Ltd  
16820 107 Ave  
Edmonton AB T5P 4C3

**Report Date:** 7/3/2017  
**Report No.:** 539904 - PLM  
**Project:** City of Saskatoon - Essex Plaza  
**Project No.:** 1667963

**Client:** GOL572

Asbestos in Surface Dust according to one of ASTM's Methods (very dependent on sampling collection technique – by TEM): ASTM D 5755, D5756, or D6480

Various other asbestos matrices (air, water, etc.) and analytical methods are available.

### Disclaimers / Qualifiers:

There may be some samples in this project that have a "NOTE:" associated with a sample result. We use added disclaimers or qualifiers to inform the client about something that requires further explanation. Here is a list with highlighted disclaimers that may be pertinent to this project. For a full explanation of these and other disclaimers, please inquire at [customerservice@iatl.com](mailto:customerservice@iatl.com).

- 1) Note: No mastic provided for analysis.
- 2) Note: Insufficient mastic provided for analysis.
- 3) Note: Insufficient material provided for analysis.
- 4) Note: Insufficient sample provided for QC reanalysis.
- 5) Note: Different material than indicated on Sample Log / Description.
- 6) Note: Sample not submitted.
- 7) Note: Attached to asbestos containing material.
- 8) Note: Received wet.
- 9) Note: Possible surface contamination.
- 10) Note: Not building material. 1% threshold may not apply.
- 11) Note: Recommend TEM-NOB analysis as per EPA recommendations.
- 12) Note: Asbestos detected but not quantifiable.
- 13) Note: Multiple identical samples submitted, only one analyzed.
- 14) Note: Analyzed by EPA 600/R-93/116. Point Counting detection limit at 0.080%.
- 15) Note: Analyzed by EPA 600/R-93/116. Point Counting detection limit at 0.125%.

### Recommendations for Vermiculite Analysis:

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gangue, homogeneous exfoliated books of mica, or mixed mineral composites). Please contact your client representative for pricing and turnaround time options available.

iATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004).

Further information on this method and other vermiculite and asbestos issues can be found at the following: Agency for Toxic Substances and Disease Registry (ATSDR) [www.atsdr.cdc.gov](http://www.atsdr.cdc.gov), United States Geological Survey (USGS) [www.minerals.usgs.gov/minerals/](http://www.minerals.usgs.gov/minerals/), US EPA [www.epa.gov/asbestos](http://www.epa.gov/asbestos). The USEPA also has an informative brochure "Current Best Practices for Vermiculite Attic Insulation" EPA 747F03001 May 2003, that may assist the health and remediation professional.

The following is a summary of the analytical process outlines in the EPA 600/R-04/004 Method:

- 1) **Analytical Step/Method:** Initial Screening by PLM, EPA 600R-93/116  
**Requirements/Comments:** Minimum of 0.1 g of sample. ~0.25% LOQ for most samples.
- 2) **Analytical Step/Method:** Wet Separation by PLM Gravimetric Technique, EPA R-04/004  
**Requirements/Comments:** Minimum 50g\*\* of dry sample. Analysis of "Sinks" only.
- 3) **Analytical Step/Method:** Wet Separation by PLM Gravimetric Technique, EPA R-04/004  
**Requirements/Comments:** Minimum 50g\*\* of dry sample. Analysis of "Floats" only.
- 4) **Analytical Step/Method:** Wet Separation by TEM Gravimetric Technique, EPA R-04/004  
**Requirements/Comments:** Minimum 50g\*\* of dry sample. Analysis of "Sinks" only.
- 5) **Analytical Step/Method:** Wet Separation by TEM Gravimetric Technique, EPA R-04/004  
**Requirements/Comments:** Minimum 50g\*\* of dry sample. Analysis of "Suspension" only.

LOQ, Limit of Quantitation estimates for mass and volume analyses.

\*With advance notice and confirmation by the laboratory.

\*\*Approximately 1 Liter of sample in double-bagged container (~9x6 inch bag of sample).



# **APPENDIX B**

## **Site Photographs**





## APPENDIX B

### Site Photographs



**Photograph 1: Asbestos-Containing 12"x12" Off-White Floor Tile with Black Flecks.**



**Photograph 2: Asbestos-Containing 12"x12" Floor Tile (Indistinguishable Pattern).**

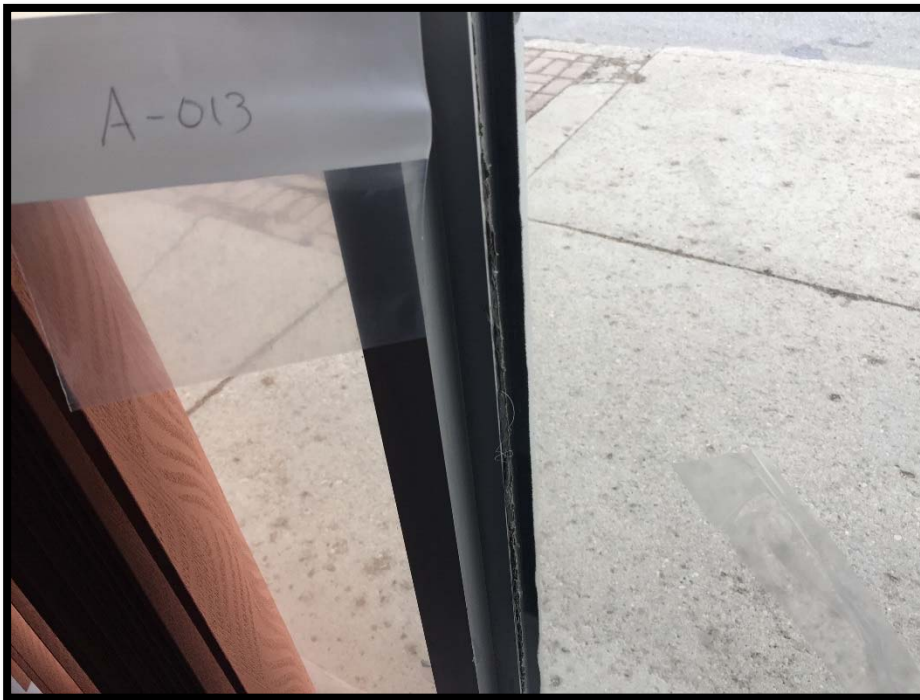


## APPENDIX B

### Site Photographs



**Photograph 3: Asbestos-Containing 9"x9" Floor Tile on Upper Plywood Ceiling.**



**Photograph 4: Asbestos-Containing Black Window Caulking.**



## APPENDIX B

### Site Photographs



**Photograph 5: Asbestos-Containing Plaster.**



**Photograph 6: Asbestos-Containing White Window Caulking.**





## APPENDIX B

### Site Photographs



**Photograph 7: Asbestos-Containing Drywall Joint Compound.**



**Photograph 8: Asbestos-Containing Grey Window Caulking.**



## APPENDIX B

### Site Photographs



**Photograph 10: Suspect Asbestos-Containing Vermiculite Insulation.**

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# **APPENDIX C**

## **Room by Room Spreadsheet**

Appendix C  
Essex Plaza  
ACM Inventory

Included/ Excluded	Floor	Room No.	Area Description	Elements	Subelements	Material Description	Accessibility	Suspect?	Sampled?	Asbestos Containing Material?	Condition	Field Notes	Sample Type	Sample ID	Sample Date	Asbestos Type	ACM Product	% of asbestos	Friable	Sprayed-on	Maintenance	Inspection	Priority	Potential for Disturbance	Recommended Action	Quantity	Photograph ID	Labelling Type	
Included	All	Throughout	All	Doors	Regular Door	Non Suspect Door	High	No	No	No	Good	Non-suspect doors were observed throughout the Site.																	
												Suspect asbestos-containing vermiculite insulation is suspected to be located above solid ceilings throughout the Site. Potential suspect asbestos-containing vermiculite insulation may also be located on the top of ceilings tiles throughout the Site. COS - Ceiling space throughout area was inspected and abated as required by third party asbestos contractor.		VS A-008											COS - Ceiling space throughout area was inspected and abated as required by third party asbestos contractor.				
Included	All	Throughout	All	Ceiling Space	Insulation	Vermiculite Insulation	Moderate	Yes	Yes	Potential	N/A																		
Included	B	Basement	Open Area	Walls	Walls	Concrete	High	No	No	No	Good		Bulk	A-061	17-Jun-17	Chrysotile	Joint Compound	2.2%	Yes	No	N/A	Annually	5	High	Manage in place.	20 ft <sup>2</sup>	Photograph 7	Door Jamb	
Included	B	Basement	Open Area	Floor	Floor	Concrete	High	No	No	No	Good																		
Included	B	Basement	Open Area	Ceiling	Ceiling	Concrete	High	No	No	No	Good																		
Included	B	Basement	Open Area	Mechanical	Drain Lines	Cast Iron Joint Packing	High	No	Yes	No	Good		Bulk	A-060	17-Jun-17														
													Bulk	A-001, A-002, A-003	17-Jun-17														
Included	M	Unit 207	Office Area	Walls	Walls	Drywall Joint Compound	High	No	Yes	No	Good		Bulk	A-004	17-Jun-17	Chrysotile	Floor Tile	1.8%	No	No	N/A	Annually	5	High	Manage in place.	50 ft <sup>2</sup>	Photograph 1	Door Jamb	
Included	M	Unit 207	Office Area	Floor	Floor	12"x12" Off-White Floor Tile with Black Flecks	High	Yes	Yes	Yes	Good		Bulk	A-005	17-Jun-17														
Included	M	Unit 207	Office Area	Floor	Floor	12"x12" Grey Floor Tile with White and Black Flecks	High	No	Yes	No	Good		Bulk	A-004	17-Jun-17														
Included	M	Unit 207	Office Area	Floor	Floor	12"x12" Light Blue Floor Tile with Blue and White Flecks	High	No	Yes	No	Good		Bulk	A-006	17-Jun-17														
Included	M	Unit 207	Office Area	Floor	Floor	12"x12" Dark Blue Floor Tile with White Flecks	High	No	Yes	No	Good		Bulk	A-007	17-Jun-17														
												Date coded to a time period in which asbestos use was not widespread.																	
Included	M	Unit 207	Office Area	Ceiling	Ceiling	2'x2' and 2'x4' Ceiling Tile with Circular Patterned Fissures.	High	No	No	No	Good		Bulk	A-009	17-Jun-17														
Included	M	Unit 207	Office Area	Ceiling	Ceiling	1'x1' Ceiling Tile with Pinholes	High	No	Yes	No	Good		Bulk	A-010	17-Jun-17														
Included	M	Unit 207	Office Area	Ceiling	Ceiling	1'x1' Ceiling Tile Mastic	High	No	Yes	No	Good		Bulk	A-010	17-Jun-17														
Included	M	Unit 207	Office Area	Ceiling	Ceiling	9"x9" Floor Tile on Plywood Ceiling	High	Yes	Yes	Yes	Good		Bulk	A-011	17-Jun-17	Chrysotile	Floor Tile	0.5%	No	No	N/A	Annually	5	High	Manage in place.	75 ft <sup>2</sup>	Photograph 2	Door Jamb	
													Bulk	A-008	17-Jun-17											COS - Ceiling space throughout area was inspected and abated as required by third party asbestos contractor.			
Included	M	Unit 207	Office Area	Ceiling	Ceiling	Vermiculite Insulation Debris	High	Yes	Yes	Potential	N/A		Bulk	A-012	17-Jun-17														
Included	M	Unit 207	Office Area	Plumbing	Sink	White Sink Undercoat	High	No	Yes	No	Good		Bulk	A-012	17-Jun-17														
Included	M	Unit 207	Office Area	Windows	Caulking	Black Window Caulking	High	Yes	Yes	Yes	Good		Bulk	A-013	17-Jun-17	Chrysotile	Caulking	7.1%	No	No	N/A	Annually	5	High	Manage in place.	20 linear ft	Photograph 4	Door Jamb	
														VS A-016, A-018, A-019, A-021, A-026, A-030, A-033															
Included	M	101 LB	Vestibule	Walls	Walls	Drywall Joint Compound	High	No	Yes	No	Good																		
Included	M	101 LB	Vestibule	Floor	Floor	Ceramic Tile	High	No	No	No	Good																		
												Date coded to a time period in which asbestos use was not widespread.																	
Included	M	101 LB	Vestibule	Ceiling	Ceiling	2'x4' Textured Ceiling Tile	High	No	No	No	Good																		
Included	M	101 LB	Vestibule	Windows	Caulking	Black Window Caulking	High	No	Yes	No	Good			VS A-014, A-017, A-022															
														VS A-016, A-018, A-019, A-021, A-026, A-030, A-033															
Included	M	102/103 LB	Waiting Area	Walls	Walls	Drywall Joint Compound	High	No	Yes	No	Good																		
Included	M	102/103 LB	Waiting Area	Floor	Floor	Ceramic Tile	High	No	No	No	Good																		
												Date coded to a time period in which asbestos use was not widespread.																	
Included	M	102/103 LB	Waiting Area	Ceiling	Ceiling	2'x4' Textured Ceiling Tile	High	No	No	No	Good																		
Included	M	102/103 LB	Waiting Area	Windows	Caulking	Black Window Caulking	High	No	Yes	No	Good			VS A-014, A-017, A-022															
														VS A-016, A-018, A-019, A-021, A-026, A-030, A-033															
Included	M	104 LB	Office	Walls	Walls	Drywall Joint Compound	High	No	Yes	No	Good																		
Included	M	104 LB	Office	Floor	Floor	Carpet	High	No	No	No	Good																		
												Date coded to a time period in which asbestos use was not widespread.																	
Included	M	104 LB	Office	Ceiling	Ceiling	2'x4' Textured Ceiling Tile	High	No	No	No	Good																		
Included	M	104 LB	Office	Windows	Caulking	Black Window Caulking	High	No	Yes	No	Good		Bulk	A-022	17-Jun-17														
														VS A-016, A-018, A-019, A-021, A-026, A-030, A-033															
Included	M	105 LB	Office	Walls	Walls	Drywall Joint Compound	High	No	Yes	No	Good																		
Included	M	105 LB	Office	Floor	Floor	Carpet	High	No	No	No	Good																		
												Date coded to a time period in which asbestos use was not widespread.																	
Included	M	105 LB	Office	Ceiling	Ceiling	2'x4' Textured Ceiling Tile	High	No	No	No	Good																		
														VS A-016, A-018, A-019, A-021, A-026, A-030, A-033															
Included	M	106/107 LB	Office	Walls	Walls	Drywall Joint Compound	High	No	Yes	No	Good																		
Included	M	106/107 LB	Office	Floor	Floor	Carpet	High	No	No	No	Good																		
												Date coded to a time period in which asbestos use was not widespread.																	
Included	M	106/107 LB	Office	Ceiling	Ceiling	2'x4' Textured Ceiling Tile	High	No	No	No	Good																		
Included	M	106/107 LB	Office	Mechanical	Duct Work	Grey Duct Mastic	High	No	Yes	No	Good		Bulk	A-023	17-Jun-17														
														VS A-014, A-017, A-022															
Included	M	106/107 LB	Office	Windows	Caulking	Black Window Caulking	High	No	Yes	No	Good																		

[illegible]

[illegible]

Appendix C  
Essex Plaza  
ACM Inventory

Included	S	SW LB	Stairwell	Walls	Walls	Plaster	High	Yes	Yes	Yes	Good		Bulk	A-032	17-Jun-17	Chrysotile	Plaster	0.25%	Yes	No	N/A	Annually	5	High	Manage in place.	Quantity included above	Photograph 5	Door Jamb
	S	SW LB	Stairwell	Floor	Floor	Carpet	High	No	No	No	Good																	
Included	S	SW LB	Stairwell	Ceiling	Ceiling	Drywall Joint Compound	High	No	Yes	No	Good			VS A-016, A-018, A-019, A-021, A-026, A-030, A-033														
Included	S	G-1 Tenant Suite	Bedroom	Walls	Walls	Drywall Joint Compound	High	Yes	Yes	Yes	Good			VS A-034, A-038, A-039		Chrysotile	Joint Compound	1.6%	Yes	No	N/A	Annually	5	High	Manage in place.	5,125 ft²	Photograph 7	Door Jamb
Included	S	G-1 Tenant Suite	Bedroom	Floor	Floor	Carpet	High	No	No	No	Good																	
Included	S	G-1 Tenant Suite	Bedroom	Ceiling	Ceiling	2'x4' Ceiling Tile with Circular Patterned Fissures	High	No	No	No	Good	Date coded to a time period in which asbestos use was not widespread.																
Included	S	G-1 Tenant Suite	Bedroom	Windows	Caulking	White Window Caulking	High	Yes	Yes	Yes	Good			VS A-037		Chrysotile	Caulking	20%	No	No	N/A	Annually	5	High	Manage in place.	90 linear ft	Photograph 6	Door Jamb
Included	S	G-2 Tenant Suite	Living Room	Walls	Walls	Drywall Joint Compound	High	Yes	Yes	Yes	Good			VS A-034, A-038, A-039		Chrysotile	Joint Compound	1.6%	Yes	No	N/A	Annually	5	High	Manage in place.	Quantity included above	Photograph 7	Door Jamb
Included	S	G-2 Tenant Suite	Living Room	Floor	Floor	Carpet	High	No	No	No	Good																	
Included	S	G-2 Tenant Suite	Living Room	Ceiling	Ceiling	2'x4' Ceiling Tile with Circular Patterned Fissures	High	No	No	No	Good	Date coded to a time period in which asbestos use was not widespread.																
Included	S	G-2 Tenant Suite	Living Room	Windows	Caulking	White Window Caulking	High	Yes	Yes	Yes	Good		Bulk	A-037	17-Jun-17	Chrysotile	Caulking	20%	No	No	N/A	Annually	5	High	Manage in place.	Quantity included above	Photograph 6	Door Jamb
Included	S	G-3 Tenant Suite	Bedroom	Walls	Walls	Drywall Joint Compound	High	Yes	Yes	Yes	Good		Bulk	A-039	17-Jun-17	Chrysotile	Joint Compound	1.6%	Yes	No	N/A	Annually	5	High	Manage in place.	Quantity included above	Photograph 7	Door Jamb
Included	S	G-3 Tenant Suite	Bedroom	Walls	Walls	Plaster	High	Yes	Yes	Yes	Good		Bulk	A-036	17-Jun-17	Chrysotile	Plaster	2.4%	Yes	No	N/A	Annually	5	High	Manage in place.	100 ft²	Photograph 5	Door Jamb
Included	S	G-3 Tenant Suite	Bedroom	Floor	Floor	Carpet	High	No	No	No	Good																	
Included	S	G-3 Tenant Suite	Bedroom	Ceiling	Ceiling	2'x4' Ceiling Tile with Circular Patterned Fissures	High	No	No	No	Good	Date coded to a time period in which asbestos use was not widespread.																
Included	S	G-3 Tenant Suite	Bedroom	Windows	Caulking	White Window Caulking	High	Yes	Yes	Yes	Good			VS A-037		Chrysotile	Caulking	20%	No	No	N/A	Annually	5	High	Manage in place.	Quantity included above	Photograph 6	Door Jamb
Included	S	G-4 Tenant Suite	Kitchen	Walls	Walls	Drywall Joint Compound	High	Yes	Yes	Yes	Good		Bulk	A-034	17-Jun-17	Chrysotile	Joint Compound	1.6%	Yes	No	N/A	Annually	5	High	Manage in place.	Quantity included above	Photograph 7	Door Jamb
Included	S	G-4 Tenant Suite	Kitchen	Floor	Floor	Beige Square Pattern Vinyl Sheet Flooring	High	No	Yes	No	Good		Bulk	A-035	17-Jun-17													
Included	S	G-4 Tenant Suite	Kitchen	Ceiling	Ceiling	Drywall Joint Compound	High	Yes	Yes	Yes	Good			VS A-034, A-038, A-039		Chrysotile	Joint Compound	1.6%	Yes	No	N/A	Annually	5	High	Manage in place.	Quantity included above	Photograph 7	Door Jamb
Included	S	G-5 Tenant Suite	Furnace Room	Walls	Walls	Drywall Joint Compound	High	Yes	Yes	Yes	Good		Bulk	A-038	17-Jun-17	Chrysotile	Joint Compound	1.6%	Yes	No	N/A	Annually	5	High	Manage in place.	Quantity included above	Photograph 7	Door Jamb
Included	S	G-5 Tenant Suite	Furnace Room	Floor	Floor	Plywood	High	No	No	No	Good																	
Included	S	G-5 Tenant Suite	Furnace Room	Ceiling	Ceiling	Drywall Joint Compound	High	Yes	Yes	Yes	Good			VS A-034, A-038, A-039		Chrysotile	Joint Compound	1.6%	Yes	No	N/A	Annually	5	High	Manage in place.	Quantity included above	Photograph 7	Door Jamb
Included	S	G-5 Tenant Suite	Furnace Room	Mechanical	Piping	Uninsulated Lines	High	No	No	No	Good																	
Included	S	G-5 Tenant Suite	Furnace Room	Electrical	Electrical Panels and Components	Electrical Panels and Components	High	Yes	No	Potential	Good	Not sampled due to safety concerns.												Inspect and sample if scheduled for removal.				
Included	S	G-6 Tenant Suite	Washroom	Walls	Walls	Drywall Joint Compound	High	Yes	Yes	Yes	Good			VS A-034, A-038, A-039		Chrysotile	Joint Compound	1.6%	Yes	No	N/A	Annually	5	High	Manage in place.	Quantity included above	Photograph 7	Door Jamb
Included	S	G-6 Tenant Suite	Washroom	Floor	Floor	Beige Square Pattern Vinyl Sheet Flooring	High	No	Yes	No	Good			VS A-035														
Included	S	G-6 Tenant Suite	Washroom	Ceiling	Ceiling	Drywall Joint Compound	High	Yes	Yes	Yes	Good			VS A-034, A-038, A-039		Chrysotile	Joint Compound	1.6%	Yes	No	N/A	Annually	5	High	Manage in place.	Quantity included above	Photograph 7	Door Jamb
Included	S	SW Tenant Suite	Stairwell	Walls	Walls	Drywall Joint Compound	High	Yes	Yes	Yes	Good			VS A-034, A-038, A-039		Chrysotile	Joint Compound	1.6%	Yes	No	N/A	Annually	5	High	Manage in place.	Quantity included above	Photograph 7	Door Jamb
Included	S	SW Tenant Suite	Stairwell	Floor	Floor	Carpet	High	No	Yes	No	Good																	
Included	S	SW Tenant Suite	Stairwell	Ceiling	Ceiling	Wood	High	No	No	No	Good																	
Included	S	SW Vestibule Tenant Suite	Vestibule	Walls	Walls	Drywall Joint Compound	High	Yes	Yes	Yes	Good			VS A-034, A-038, A-039		Chrysotile	Joint Compound	1.6%	Yes	No	N/A	Annually	5	High	Manage in place.	Quantity included above	Photograph 7	Door Jamb
Included	S	SW Vestibule Tenant Suite	Vestibule	Floor	Floor	12"x12" Off-White Floor Tile with Brown Flecks	High	No	Yes	No	Good		Bulk	A-040	17-Jun-17													
Included	S	SW Vestibule Tenant Suite	Vestibule	Ceiling	Ceiling	Drywall Joint Compound	High	Yes	Yes	Yes	Good			VS A-034, A-038, A-039		Chrysotile	Joint Compound	1.6%	Yes	No	N/A	Annually	5	High	Manage in place.	Quantity included above	Photograph 7	Door Jamb
Included	S	SW Vestibule Tenant Suite	Vestibule	Ceiling	Ceiling	Wood	High	No	No	No	Good																	
Included	M	150 COMM	Office	Walls	Walls	Drywall Joint Compound	High	No	Yes	No	Good		Bulk	A-041, A-042	17-Jun-17													
Included	M	150 COMM	Office	Floor	Floor	Carpet	High	No	No	No	Good																	
Included	M	150 COMM	Office	Floor	Floor	12"x12" Light Blue Floor Tile with Blue and White Flecks	High	No	Yes	No	Good			VS A-006														
Included	M	150 COMM	Office	Ceiling	Ceiling	2'x4' Textured Ceiling Tile	High	No	No	No	Good	Date coded to a time period in which asbestos use was not widespread.																
Included	M	150 COMM	Office	Plumbing	Sink	White Sink Undercoat	High	No	Yes	No	Good			VS A-020														
Included	M	150 COMM	Office	Windows	Caulking	Black Window Caulking	High	No	Yes	No	Good		Bulk	A-043	17-Jun-17													
Included	M	151 COMM	Washroom	Walls	Walls	Drywall Joint Compound	High	No	Yes	No	Good			VS A-041, A-042, A-044														
Included	M	151 COMM	Washroom	Floor	Floor	12"x12" Grey Floor Tile with White and Black Flecks	High	No	Yes	No	Good			VS A-005														
Included	M	151 COMM	Washroom	Ceiling	Ceiling	2'x4' Textured Ceiling Tile	High	No	No	No	Good	Date coded to a time period in which asbestos use was not widespread.																
Included	M	152 COMM	Hallway	Walls	Walls	Drywall Joint Compound	High	No	Yes	No	Good		Bulk	A-044	17-Jun-17													
Included	M	152 COMM	Hallway	Floor	Floor	12"X12" Beige Floor Tile with Brown and White Flecks	High	Yes	Yes	Yes	Good		Bulk	A-045	17-Jun-17	Chrysotile	Floor Tile	2.6%	No	No	N/A	Annually	5	High	Manage in place.	135 ft²		Door Jamb



[illegible]

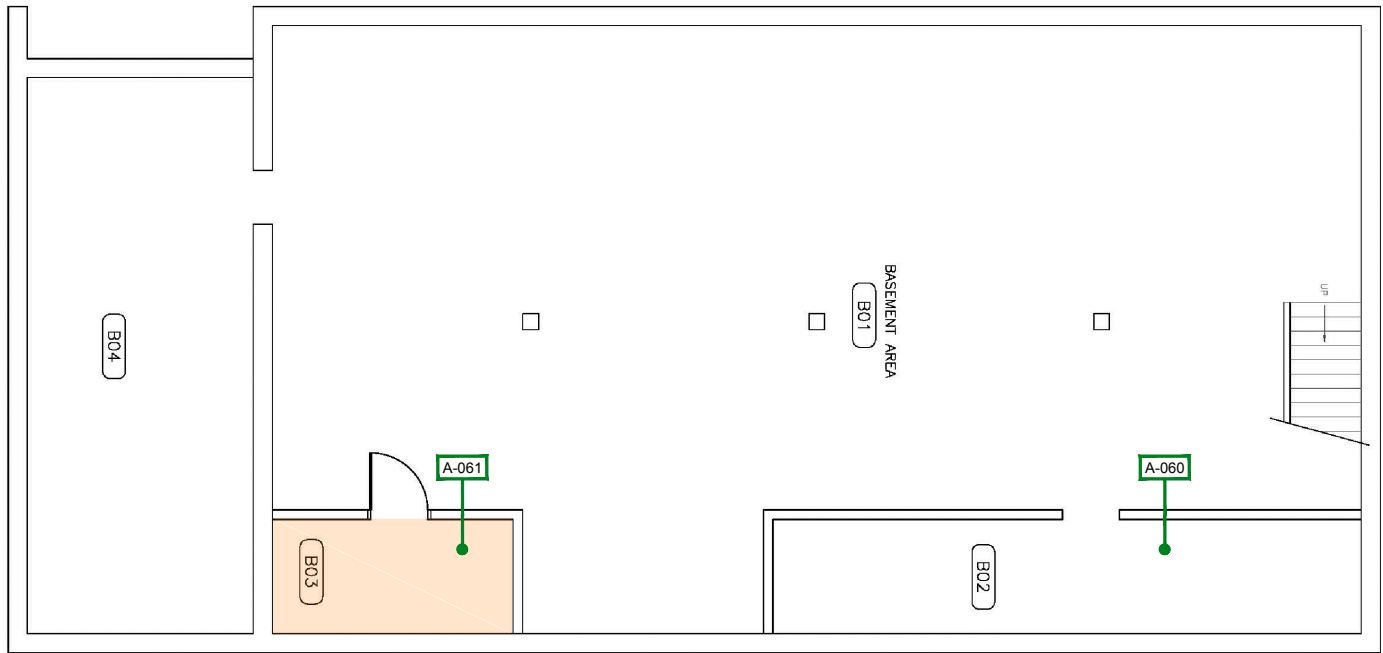
Appendix C  
Essex Plaza  
ACM Inventory

[illegible]



# **APPENDIX D**

## **Floor Plans**



LEGEND

- ASBESTOS SAMPLE LOCATION
- ASBESTOS - CONTAINING DRYWALL JOINT COMPOUND

NOTE(S)

1. ASBESTOS IS A CARCINOGEN. DO NOT BREATHE ASBESTOS DUST.
2. SUSPECT ASBESTOS-CONTAINING VERMICULITE INSULATION IS SUSPECTED TO BE LOCATED ABOVE THE SOLID AND SUSPENDED CEILINGS THROUGHOUT THE SITE.

REFERENCE(S)

PLAN OBTAINED FROM INFRASTRUCTURE SERVICES DEPARTMENT CITY OF SASKATOON. DATED: 17/08/2017.

CLIENT  
CITY OF SASKATOON

CONSULTANT



YYYY-MM-DD 2017-08-25

DESIGNED KH

PREPARED VI

REVIEWED KH

APPROVED AG

SCHEMATIC ONLY, NOT TO SCALE

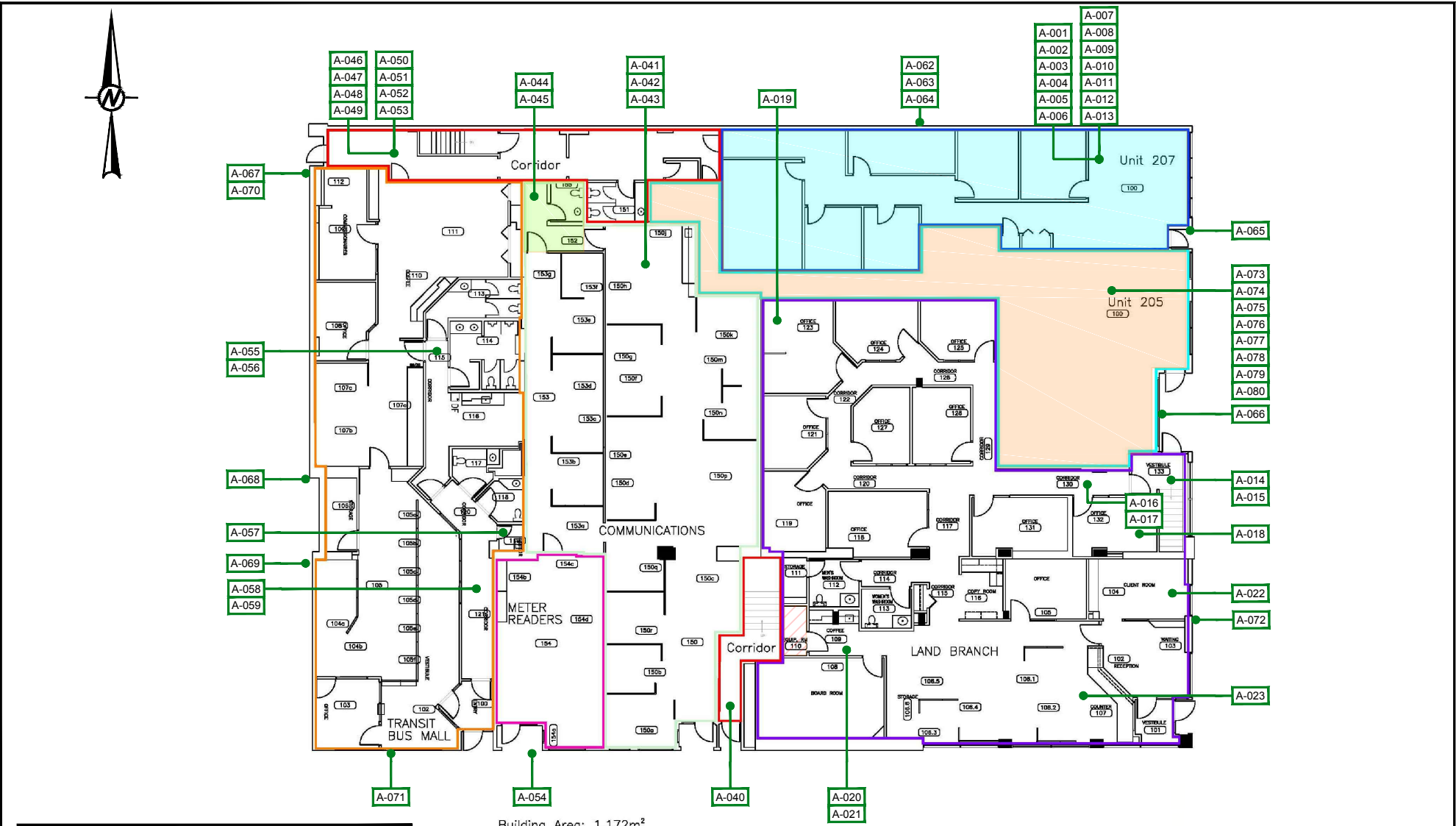
PROJECT  
ASBESTOS ASSESSMENT  
ESSEX PLAZA  
205 / 207 3 AVENUE NORTH

TITLE  
BASEMENT PLAN

PROJECT NO. 1667963 CONTROL 1000-HM-0002

REV. 0

FIGURE 1



**LEGEND**

- ASBESTOS SAMPLE LOCATION
- ASBESTOS-CONTAINING FLOOR TILE
- ASBESTOS-CONTAINING FLOOR TILE, FLOOR TILE ON PLYWOOD CEILING AND WINDOW CAULKING
- ASBESTOS - CONTAINING DRYWALL JOINT COMPOUND, WINDOW CAULKING AND FLOOR TILE
- NO ACCESS

**NOTE(S)**

1. ASBESTOS IS A CARCINOGEN. DO NOT BREATHE ASBESTOS DUST.

2. SUSPECT ASBESTOS-CONTAINING VERMICULITE INSULATION IS SUSPECTED TO BE LOCATED ABOVE THE SOLID AND SUSPENDED CEILINGS THROUGHOUT THE SITE.

**REFERENCE(S)**

PLAN OBTAINED FROM INFRASTRUCTURE SERVICES DEPARTMENT CITY OF SASKATOON. DATED: 25/04/2017.

**CLIENT**

CITY OF SASKATOON

**CONSULTANT**



YYYY-MM-DD	2017-08-25
DESIGNED	KH
PREPARED	VI
REVIEWED	KH
APPROVED	AG

SCHEMATIC ONLY, NOT TO SCALE

**PROJECT**

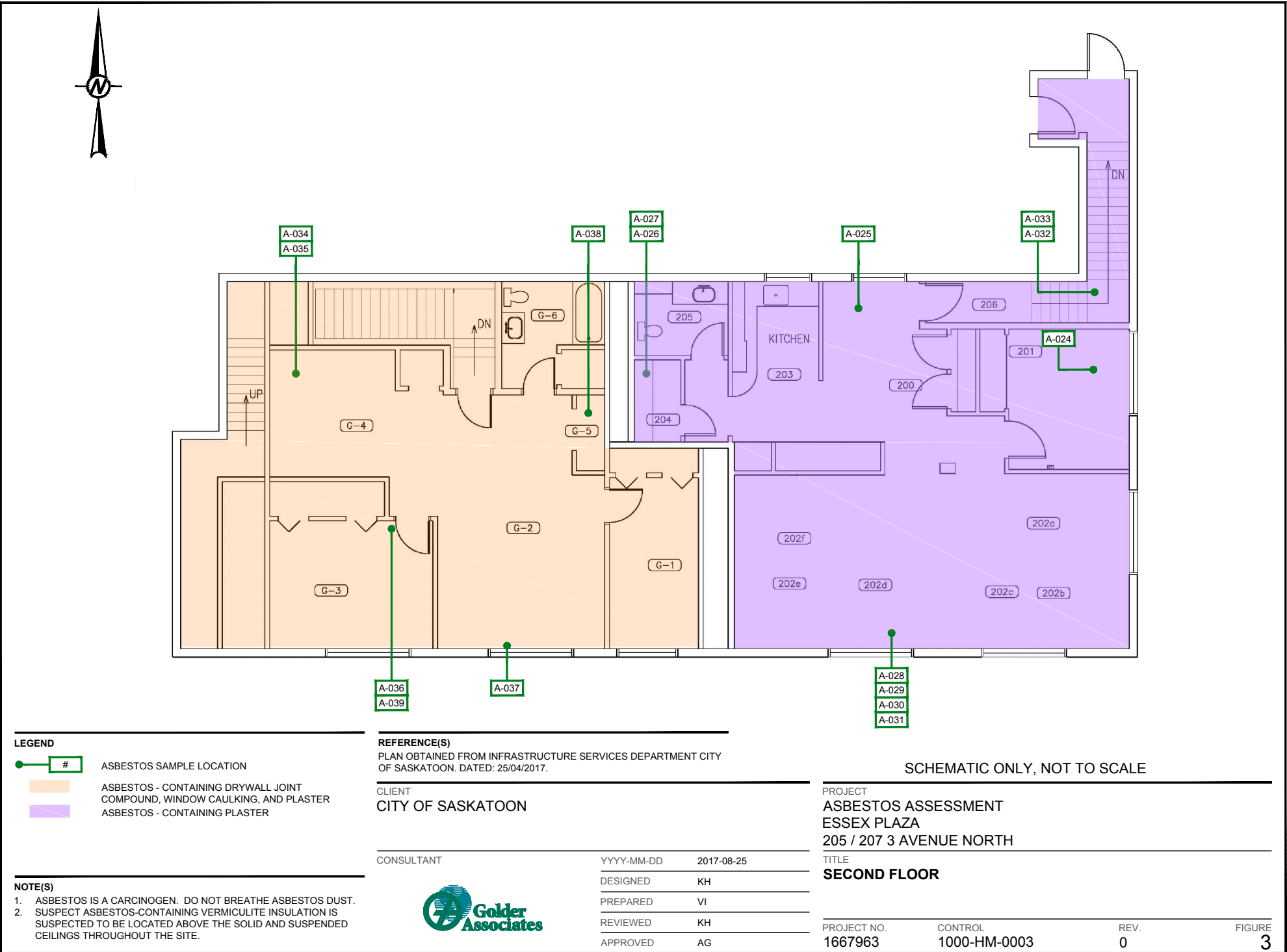
ASBESTOS ASSESSMENT  
ESSEX PLAZA  
205 / 207 3 AVENUE NORTH

**TITLE**

MAIN FLOOR

PROJECT NO.	CONTROL	REV.	FIGURE
1667963	1000-HM-0001	0	2

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A 26 mm



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**Golder Associates Ltd.**  
**16820 107 Avenue**  
**Edmonton, Alberta, T5P 4C3**  
**Canada**  
**T: +1 (780) 483 3499**





# **BERSCH**

## **CONSULTING LTD.**

October 13, 2017

City of Saskatoon  
3130 Laurier Drive  
Saskatoon, SK  
S7L 5J7

**ATTENTION: Lisa Rohachuk**

**SUBJECT: Site Review Unit B 230 23<sup>rd</sup> Street East – Essex Plaza**

Brad Berschiminsky of Bersch Consulting Ltd. conducted a site visit on October 6, 2017 to Essex Plaza located at 201 3<sup>rd</sup> Avenue North, Saskatoon, Saskatchewan. The purpose of the visit was to review the ceiling above the suspended ceiling within the Unit B office area to determine what precautions are required when anchoring into the structure above the gypsum board.

The gypsum board above the suspended ceiling has been fire-taped to provide a seal along all seams and joints throughout the ceiling surface. The drywall joint compound was previously sampled resulting in no asbestos detected in the mud compound.

Your project scope of work includes anchoring to the structure above the gypsum board. The one concern is the ceiling cavity above the gypsum board. Caution shall ensure the anchors are fastened into the structure and not the cavity between. There is a potential for vermiculite to be present within the cavity above the drywall, as it was discovered in adjoining areas of the building.

If any questions or concerns arise, please contact me at 306.222.7477. Thank you for this opportunity of service!

Sincerely,



Brad Berschiminsky  
Bersch Consulting Ltd.

File No.: B67SIJ06G – Essex Plaza

# **BERSCH**

## **CONSULTING LTD.**

### **PRE-RENOVATION ASSESSMENT**

June 9, 2017

**CLIENT: City of Saskatoon**  
**3130 Laurier Drive**  
**Saskatoon, SK**  
**S7L 5J7**

**ATTENTION: Natalie Dee Scott BAID**

**PROJECT: Essex Plaza Meter Reader Area – 201 3<sup>rd</sup> Avenue South – Testing of Multiple Locations for Construction – DPO: D849542**

**FILE NUMBER: B67PRE23G**

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Brad Berschminsky of Bersch Consulting Ltd. conducted a site visit on May 23, 2017 to Essex Plaza located at 201 3<sup>rd</sup> Avenue North, Saskatoon, Saskatchewan. The purpose of the visit was to investigate and collect bulk samples to determine the presence/absence of asbestos. Six (6) bulk samples were collected and analyzed for the identification of asbestos. Asbestos was detected within one of the samples. The asbestos containing sample consists of pipe fitting mud compound collected from a fitting above the suspended ceiling in the centre of the space currently Unit B 230 23<sup>rd</sup> street east.

The results for the bulk samples were obtained by examination in accordance with the current USEPA 600/R-93/116 Method for the analysis of asbestos in building materials using polarized light microscopy and dispersion staining techniques. The detection limit of this method is listed as less than 1% by volume. This test report relates only to the materials sent for examination and any use or extension of the information by the client of these results is the responsibility of the client. Please reference Appendix I for the bulk analysis results.

#### **SITE OBSERVATION AND INFORMATION:**

- 1) The ceiling space within the area “Potential to Raise Entire Ceiling” currently poses no issue for accessing the ceiling space or removing the suspended ceiling. The drywall ceiling surface above the suspended ceiling has been fire-taped and sealed from the space above the drywall. It is suspected the vermiculite identified in other areas of the building is present above the drywall. Refrain from puncturing through the drywall. If any activity is performed that will require penetrating the drywall, special precautions are recommended. See photo 1 on page 3 of this report to view the ceiling throughout the space.

- 2) Two large pipeline fittings were observed and sampled within the ceiling space. The mud compound was removed leaving remnants on the pipeline fittings. The glovebag removal is recommended to remove the material from the pipeline surface prior to removing the ceiling tile throughout the area. See photo 1.
- 3) The green outlined areas you provided on the floor plan were sampled for asbestos containing drywall mud compound resulting in no asbestos detected. Drilling into the walls will not pose an asbestos concern. Fiberglass was observed within the wall cavities. The ceiling tiles within the space whereas the ceiling may be raised was sampled and determined to be non asbestos.
- 4) The ceiling space directly to the north of the meter readers area and east of the area mentioned above, reveals vermiculite insulation within the ceiling space above the drywall as well as debris throughout the ceiling grid and on the ceiling tile surfaces. We recommend a thorough HEPA vacuuming of the suspended ceiling system throughout this area either in conjunction with this renovation or in future planning. The seams / penetrations in the drywall ceiling above the suspended ceiling systems should be sealed with caulking to prevent the vermiculite from falling on the surfaces below the drywall. See photo 2.

If any questions arise on the results of the attached information, please contact me at 306.222.7477 or our office at 306.978.6665. Thank you for this opportunity of service!

Sincerely,



Brad Berschiminsky  
Bersch Consulting Ltd.

File No.: B67PRE23G – Essex Plaza Meter Readers

## SITE PHOTOS

**PHOTO 1 – Fire-tape on Drywall Ceiling and Remnants of Asbestos Mud Compound on Pipeline Fitting.**



**PHOTO 2 – Vermiculite Debris Within the Ceiling Space North of Meter Readers Area.**



## **APPENDIX I**

### **BULK SAMPLE ANALYSIS**

***Bersch Consulting Ltd.***

B67BAE23G

244-2002 Quebec Avenue  
Saskatoon, SK S7K 1W4**BULK SAMPLE ANALYSIS REPORT****PROJECT NO: B67.17****CLIENT: CITY OF SASKATOON****CONTACT: NATALIE DEE SCOTT BAID****LOCATION: ESSEX PLAZA METER READERS**

NO.	DATE	SAMPLE INFORMATION	ASBESTOS	%	ANALYST
1	23-May-17	Compilation Sample of the Drywall Mud Compound From Both Sides of the Centre Wall.	No Asbestos Detected		WB
2	23-May-17	Compilation Sample of the Drywall Mud Compound on the South Wall Adjacent the Doorway.	No Asbestos Detected		WB
3	23-May-17	Compilation Sample of the Drywall Mud Compound from the 2 Areas Along East Wall.	No Asbestos Detected		WB
4	23-May-17	Pipeline Mud Compound Remnants on the Large Pipeline Fitting in the Centre of the Room Within the Ceiling Space.	Chrysotile	40	WB
5	23-May-17	2' X 4' Ceiling Tile with Pinhole Pattern	No Asbestos Detected		WB
6	23-May-17	West Area, Parking Enforcement - Closet Pony Wall - Drywall Mud Compound.	No Asbestos Detected		WB

# **BERSCH**

## **CONSULTING LTD.**

### **PRE-RENOVATION ASSESSMENT**

Aug 9, 2017

**CLIENT: City of Saskatoon  
3130 Laurier Drive  
Saskatoon, SK  
S7L 5J7**

**ATTENTION: Nathan Hahn**

**PROJECT: Essex Plaza – 201 3<sup>rd</sup> Avenue South – Testing of Multiple Locations for Repair –**

**FILE NUMBER: B67PRE23G**

---

Mitch Webber of Bersch Consulting Ltd. conducted a site visit on August 3, 2017 to Essex Plaza located at 201 3<sup>rd</sup> Avenue North, Saskatoon, Saskatchewan. The purpose of the visit was to investigate and collect bulk samples to determine the presence/absence of asbestos. Two (2) bulk samples were collected and analyzed for the identification of asbestos. Asbestos **was not** detected within the samples.

The results for the bulk samples were obtained by examination in accordance with the current USEPA 600/R-93/116 Method for the analysis of asbestos in building materials using polarized light microscopy and dispersion staining techniques. The detection limit of this method is listed as less than 1% by volume. This test report relates only to the materials sent for examination and any use or extension of the information by the client of these results is the responsibility of the client. Please reference ***Appendix I*** for the bulk analysis results.

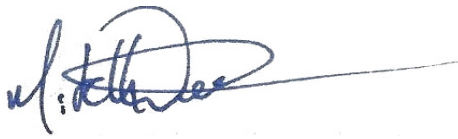


**SITE OBSERVATION AND INFORMATION:**

- 1) The back break room for the drivers had a hole in the drywall. No mud was exposed. This area can be repaired as there is no asbestos concern.
- 2) Office 103 had a hole in the drywall beneath the window adjacent entry. This area can also be repaired as there is no asbestos concern.

If any questions arise on the results of the attached information, please contact our office at 306.978.6665. Thank you for this opportunity of service!

Sincerely,

A handwritten signature in blue ink, appearing to read 'Mitch Webber', with a long horizontal line extending to the right.

Mitch Webber  
Bersch Consulting Ltd.  
File No.: B67PRH03G – Essex Plaza

## **APPENDIX I**

### **BULK SAMPLE ANALYSIS**

***Bersch Consulting Ltd.***

B67BAH03G

244-2002 Quebec Avenue  
Saskatoon, SK S7K 1W4

**BULK SAMPLE ANALYSIS REPORT****PROJECT NO: B67.17****CLIENT: CITY OF SASKATOON****CONTACT: NATHAN HAHN****LOCATION: ESSEX PLAZA - 201 3RD AVENUE SOUTH, SASKATOON, SK.**

NO.	DATE	SAMPLE INFORMATION	ASBESTOS	%	ANALYST
1	3-Aug-17	Back Break Room - Drywall Mud Compound	No Asbestos Detected		EMSL
2	3-Aug-17	103 Office - Drywall Mud Compound	No Asbestos Detected		EMSL

# BERSCH CONSULTING LTD.

April 20<sup>th</sup>, 2017

City of Saskatoon  
Facilities & Fleet Management Division  
222 3<sup>rd</sup> Avenue North  
Saskatoon, SK  
S7K 0J5

**ATTENTION: Cris Figueroa**

**SUBJECT: Bulk Sample Analysis Report**

Please find attached the laboratory results for the vermiculite bulk sample collected on April 19<sup>th</sup>, 2017 from the Land Branch Building located at 201 3<sup>rd</sup> Avenue North in Saskatoon, SK. The sample was analyzed for the identification of asbestos. Asbestos **was** detected within the sample.

The results for the bulk sample was obtained by examination in accordance with the EPA 600/R-93/116 method for 0.1% target analytical sensitivity using analytical electron microscopy. The laboratory detected actinolite/tremolite (amphibole) asbestos greater than 0.1% by weight. Based on the sample results, the material is classified as a **hazardous** material. Materials containing greater than 0.1% asbestos by weight are considered asbestos-containing materials and must be handled as such. Please refer to the attached analytical report for the sample results.

This test report relates only to the materials sent for examination and any use or extension of the information by the client of these results is the responsibility of the client.

If any questions arise on the results of the attached information, please contact our office. Thank you for this opportunity of service.

Sincerely,



Brad Berschiminsky  
Bersch Consulting Ltd.  
File: B67BLD19G

***Bersch Consulting Ltd.***

B67BAD19G

244-2002 Quebec Avenue

Saskatoon, SK S7K 1W4

**BULK SAMPLE ANALYSIS REPORT****PROJECT NO: B67.17****CLIENT: CITY OF SASKATOON****CONTACT: Cris Figueroa****LOCATION: Land Branch Building - 201 3rd Ave North**

NO.	DATE	SAMPLE INFORMATION	ASBESTOS	%	ANALYST
1	19-Apr-17	Vermiculite Insulation Within Corridor 120 Ceiling Space On The Upper Surface Of The Fluorescent Light.	Actinolite / Tremolite	> 0.1%	WB

***BERSCH & ASSOCIATES LTD.***

October 21<sup>st</sup>, 2016

City of Saskatoon  
Interior Design Department  
Cosmo Civic Centre  
3130 Laurier Drive  
Saskatoon, SK  
S7L 5J7

**ATTENTION: Kimberly Rudd**

**SUBJECT: Bulk Sample Analysis Report – Essex Plaza – Cathy's Office**

Please find attached the laboratory results for the bulk samples collected from the Essex Plaza on October 14<sup>th</sup>, 2016 located at 226 23<sup>rd</sup> Street East, Saskatoon, SK. The samples were analyzed for the identification of asbestos. Asbestos **was not** detected in the samples.

The results for the samples submitted were obtained by examination in accordance with the current USEPA 600/R-93/116 Method for the analysis of asbestos in building materials using polarized light microscopy and dispersion staining techniques. The detection limit of this method is listed as less than 1% by volume.

This test report relates only to the materials sent for examination and any use or extension of the information by the client of these results is the responsibility of the client.

If any questions arise on the results of the attached information, please contact our office 306 222 7477. Thank you for this opportunity of service!

Sincerely,



Brad Berschiminsky  
Bersch & Associates Ltd.

File: B67BLJ14F – Essex Plaza



***Bersch & Associates Ltd.***

B67BAJ14F

Box 3568

Humboldt, Sask. S0K 2A0

**BULK SAMPLE ANALYSIS REPORT****PROJECT NO: B67.16****CLIENT: CITY OF SASKATOON  
INTERIOR DESIGN DEPARTMENT****CONTACT: KIMBERLY RUDD****LOCATION: ESSEX PLAZA, 226 23RD STREET EAST, SASKATOON, SK**

NO.	DATE	SAMPLE INFORMATION	ASBESTOS	%	ANALYST
1a	14-Oct-16	Office 8 - Plaster Skim Coat Compilation Above Suspended Ceiling - Wall/Beam/Column	No Asbestos Detected		WB
1b	14-Oct-16	Office 8 - Plaster Base Coat Compilation Above Suspended Ceiling Wall/Beam/Column	No Asbestos Detected		WB
2	14-Oct-16	Office 8 - Concrete Material From Beam Above Suspended Ceiling	No Asbestos Detected		WB
3	14-Oct-16	Office 8 - Concrete Material From Column Above Suspended Ceiling	No Asbestos Detected		WB
4	14-Oct-16	Office 8 - Drywall Mud Compound On West Wall	No Asbestos Detected		WB