



May 31, 2017

## CITY OF SASKATOON

# Asbestos-Containing Building Materials Assessment Report - Lions Arena



### Submitted to:

The City of Saskatoon  
1101 Avenue P North  
Saskatoon, SK S7L 7K6

**Report Number: 1667963**

### Distribution:

One Copy: City of Saskatoon  
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) to conduct an asbestos-containing building materials assessment of the Lions Arena (the Site) located at 2205 McEown Avenue in Saskatoon, Saskatchewan. This assessment report details our findings, conclusions and recommendations for the Site. A walkthrough of the Site was conducted on February 22, 2017 and the assessment was conducted on April 18, 2017 by Kody Henderson, OHS Project Manager. Asbestos-containing building materials were identified within the Lions Arena during the assessment. Further information is provided in Section 3.0.

### 2.0 SCOPE OF WORK

In accordance with Tender 16-0844, 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**

The Lions Arena was constructed in 1968 and consists of numerous change rooms, offices spaces, and a rink on the main floor and mechanical rooms within the basement as well as a 2009/2010 addition consisting of Rooms 114 to 121. Also located along the side of the Site on the main floor is a mechanical room and garage/zamboni room. During the assessment, Rooms 114 to 121 were treated as one functional space, the remaining main floor change rooms, offices, and rink as a second functional space, the mechanical room and garage/zamboni room as a third functional space, and the basement mechanical rooms as a fourth 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.
- A floor plan outlining the sample locations and locations of identified asbestos-containing materials is provided in Appendix D.
- Please refer to Sections 4.0 and 7.0 of this report for a summary of the limitations encountered.

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

A total of thirty-seven (37) samples of building materials were collected and tested for asbestos content during the assessment of the Lions Arena. Six (6) 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 below.

- Drywall Joint Compound (select rooms only); and
- Vermiculite Insulation (select block walls only).

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

#### ***Drywall Joint Compound***

Eight (8) samples of drywall joint compound were collected during the assessment. Three of the samples collected within the second functional space were found to contain 1.8% to 2.1% Chrysotile asbestos. Asbestos-containing drywall joint compound (see Photograph 1 in Appendix B) was observed in the following locations:

- Room 107 (approximately 120 ft<sup>2</sup>);
- Room 108 (approximately 210 ft<sup>2</sup>);
- Room 109 (approximately 210 ft<sup>2</sup>); and
- Room 110 (approximately 120 ft<sup>2</sup>).

The additional drywall joint compound samples were collected from the third functional space. All drywall joint compound samples collected within the third functional space were found to not contain asbestos. Drywall joint compound was not observed in the remaining functional spaces.



## ASBESTOS-CONTAINING BUILDING MATERIALS ASSESSMENT REPORT - LIONS ARENA

### *Vermiculite Insulation*

Three (3) samples of vermiculite were collected during the assessment. All three of the samples collected within the second functional space were found to contain 1.2% to 1.5% Actinolite asbestos. Asbestos-containing vermiculite (see Photograph 2 in Appendix B) was confirmed in the following locations:

- Room 104 (approximately 120 ft<sup>2</sup>);
- Room 112A (approximately 60 ft<sup>2</sup>); and
- Room 113 (approximately 120 ft<sup>2</sup>).

During the assessment, Golder cored into approximately 13 locations to evaluate for the presence or absence of vermiculite. The vermiculite insulation was observed to be located sporadically throughout the Site along exterior and interior walls. It is assumed that the vermiculite insulation is located around the perimeter walls of Rooms 113 to 101 based upon where the vermiculite insulation was observed, however this was not confirmed within each room. Please refer to the floor plan provided in Appendix D for the anticipated locations of the vermiculite. Further investigation activities may be required to confirm the exact locations of the vermiculite.

Based upon the assumption that the vermiculite is located in the perimeter walls of the Rooms 113 to 101, Golder has provided approximate quantities within each room below.

- Room 101 (approximately 750 ft<sup>2</sup>) (assumed);
- Room 102 (approximately 265 ft<sup>2</sup>) (assumed);
- Room 103 (approximately 265 ft<sup>2</sup>) (assumed);
- Room 104 (approximately 120 ft<sup>2</sup>) (confirmed);
- Room 106 (approximately 120 ft<sup>2</sup>) (assumed);
- Room 107 (approximately 250 ft<sup>2</sup>) (assumed);
- Room 108 (approximately 100 ft<sup>2</sup>) (assumed);
- Room 110 (approximately 350 ft<sup>2</sup>) (assumed);
- Room 111 (approximately 200 ft<sup>2</sup>) (assumed);
- Room 111A (approximately 60 ft<sup>2</sup>) (assumed);
- Room 112 (approximately 200 ft<sup>2</sup>) (assumed);
- Room 112A (approximately 60 ft<sup>2</sup>) (confirmed); and
- Room 113 (approximately 625 ft<sup>2</sup>) (exterior wall confirmed, interior perimeter walls assumed).



### 3.1.2 Non Asbestos-Containing Materials

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

- Drywall joint compound (excluding the second functional space);
- White firestop;
- Loose grey vinyl sheet flooring with black and white specks;
- Red firestop;
- Grey duct mastic;
- Black wall mastic;
- 1'x2' Black floor tile;
- White duct mastic;
- White plastic panel caulking;
- White pipe caulking;
- White door caulking;
- Black and grey vinyl sheet flooring;
- Grey floor levelling compound;
- Grey vinyl sheet flooring with white and black specks;
- Black floor mastic;
- Brown floor putty;
- Black bleacher seating;
- Exterior white penetration caulking;
- Exterior green building caulking;
- Exterior grey firestop;
- Exterior white window caulking;
- The drain lines throughout the site were not observed to have suspect packing and were observed to be insulated with fibreglass in select locations;
- The duct work throughout the site was observed to be uninsulated or insulated with fibreglass insulation;
- The piping throughout the site was observed to be insulated with fibreglass and had PVC fittings; and
- The mechanical insulation within Room 122 was observed to be a black Styrofoam-like insulation and is not suspected of containing asbestos.



### 4.0 EXCLUDED AREAS AND MATERIALS

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

- Floor levelling compound was encountered and sampled at the time of the assessment. If additional floor levelling compound is encountered during demolition activities, additional sampling should be conducted to evaluate the presence or absence of asbestos.
- 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.
- The roof and associated components were not assessed by Golder during the assessment as per Tender 16-0844. 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.
- The duct connector fabric throughout the site was not sampled as causing damage to the fabric could potential release fibres in the air distribution system. If the duct connector fabric is scheduled for impact, further sampling may be required.
- Golder was unable to access Room 102 during the assessment. If work activities are scheduled within this area, further sampling may be required. If building materials within Room 102 are to be removed or impacted by future renovation or demolition activities, additional investigation and sampling of suspect materials may be required.
- Golder assessed the exterior metal cladding for potential asbestos-containing materials where possible. Due to the potential to affect the building envelope, the metal cladding was not impacted or removed to assess below. If the metal cladding is 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 drywall joint compound of Rooms 107 to 110 and vermiculite block wall cavity insulation within select locations of the Site. 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.





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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.

### **Drywall Joint Compound**

If scheduled for impact, asbestos-containing grey firestop 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.

### **Vermiculite Insulation**

If scheduled for impact, asbestos-containing vermiculite insulation should be abated following high-risk abatement work procedures as outlined in the *Saskatchewan Asbestos Abatement Manual* (2017). Alternatively, as the vermiculite insulation is enclosed within block wall, 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.

## **6.0 SURVEY LIMITATIONS**

This report is based on data and information collected by Golder during the assessment conducted on April 18, 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 Tender 16-0844 and the initial site walkthrough with the Client, the time and budgetary constraints imposed by the Client, and availability of access to the property.

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.





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## ASBESTOS-CONTAINING BUILDING MATERIALS ASSESSMENT REPORT - LIONS ARENA

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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 - LIONS ARENA

### Report Signature Page

#### GOLDER ASSOCIATES LTD.

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KH/AG/

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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:** 5/1/2017  
**Report No.:** 534882 - PLM  
**Project:** Asbestos Surveys - City of Saskatoon (Lions Arena)  
**Project No.:** 1667963

**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

**Lab No.:** 6213931  
**Client No.:** A-001

Percent Asbestos:  
*None Detected*

**Analyst Observation:** White Caulk  
**Client Description:** White Firestop  
Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room B3  
**Facility:**  
Percent Non-Fibrous Material:  
100

**Lab No.:** 6213932  
**Client No.:** A-002

Percent Asbestos:  
*None Detected*

**Analyst Observation:** Grey Floor Tile  
**Client Description:** Loose Grey VSF with Black  
and White Specks  
Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room B3  
**Facility:**  
Percent Non-Fibrous Material:  
100

**Lab No.:** 6213933  
**Client No.:** A-003

Percent Asbestos:  
*None Detected*

**Analyst Observation:** Red/Black Caulk  
**Client Description:** Red Firestop  
Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room B2  
**Facility:**  
Percent Non-Fibrous Material:  
100

**Lab No.:** 6213934  
**Client No.:** A-004

Percent Asbestos:  
*None Detected*

**Analyst Observation:** Grey Mastic  
**Client Description:** Grey Duct Mastic  
Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room B2  
**Facility:**  
Percent Non-Fibrous Material:  
100

**Lab No.:** 6213935  
**Client No.:** A-005

Percent Asbestos:  
*None Detected*

**Analyst Observation:** Black Mastic  
**Client Description:** Black Wall Mastic  
Percent Non-Asbestos Fibrous Material:  
25 Cellulose

**Location:** Room B2  
**Facility:**  
Percent Non-Fibrous Material:  
75

**Lab No.:** 6213936  
**Client No.:** A-006

Percent Asbestos:  
*None Detected*

**Analyst Observation:** Black Floor Tile  
**Client Description:** 1'X2' Black Floor Tile  
Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 114  
**Facility:**  
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.

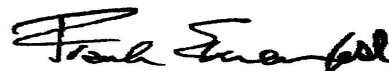
**Date Received:** 4/24/2017

**Date Analyzed:** 05/01/2017

**Signature:**

**Analyst:** Randy Caran

**Approved By:**



Frank E. Ehrenfeld, III  
Laboratory Director

## CERTIFICATE OF ANALYSIS

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

**Report Date:** 5/1/2017  
**Report No.:** 534882 - PLM  
**Project:** Asbestos Surveys - City of Saskatoon (Lions Arena)  
**Project No.:** 1667963

**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

**Lab No.:** 6213937  
**Client No.:** A-007

Percent Asbestos:  
*None Detected*

**Analyst Observation:** White/Grey Mastic  
**Client Description:** White Duct Mastic

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 114  
**Facility:**

Percent Non-Fibrous Material:  
100

**Lab No.:** 6213938  
**Client No.:** A-008

Percent Asbestos:  
*None Detected*

**Analyst Observation:** White Caulk  
**Client Description:** White Firestop

Percent Non-Asbestos Fibrous Material:  
1 Fibrous Glass

**Location:** Room 114B  
**Facility:**

Percent Non-Fibrous Material:  
99

**Lab No.:** 6213939  
**Client No.:** A-009

Percent Asbestos:  
*None Detected*

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

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 124  
**Facility:**

Percent Non-Fibrous Material:  
100

**Lab No.:** 6213940  
**Client No.:** A-010

Percent Asbestos:  
*None Detected*

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

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 124  
**Facility:**

Percent Non-Fibrous Material:  
100

**Lab No.:** 6213941  
**Client No.:** A-011

Percent Asbestos:  
*None Detected*

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

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 124  
**Facility:**

Percent Non-Fibrous Material:  
100

**Lab No.:** 6213942  
**Client No.:** A-012

Percent Asbestos:  
*None Detected*

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

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 124  
**Facility:**

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.

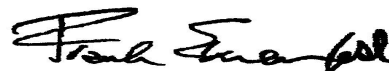
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**Project:** Asbestos Surveys - City of Saskatoon (Lions Arena)  
**Project No.:** 1667963

**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

**Lab No.:** 6213943  
**Client No.:** A-013

Percent Asbestos:  
*None Detected*

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

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 124  
**Facility:**

Percent Non-Fibrous Material:  
100

**Lab No.:** 6213944  
**Client No.:** A-014

Percent Asbestos:  
*None Detected*

**Analyst Observation:** White Caulk  
**Client Description:** White Plastic Panel  
Caulking  
Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 124  
**Facility:**  
Percent Non-Fibrous Material:  
100

**Lab No.:** 6213945  
**Client No.:** A-015

Percent Asbestos:  
*None Detected*

**Analyst Observation:** Grey Mastic  
**Client Description:** Grey Duct Mastic  
Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 124  
**Facility:**  
Percent Non-Fibrous Material:  
100

**Lab No.:** 6213946  
**Client No.:** A-016

Percent Asbestos:  
*None Detected*

**Analyst Observation:** White Caulk  
**Client Description:** White Pipe Caulking  
Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 122  
**Facility:**  
Percent Non-Fibrous Material:  
100

**Lab No.:** 6213947  
**Client No.:** A-017

Percent Asbestos:  
*PC 2.1 Chrysotile*

**Analyst Observation:** Off-White Joint  
Compound  
**Client Description:** Drywall Joint Compound  
Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 109  
**Facility:**  
Percent Non-Fibrous Material:  
97.9

**Lab No.:** 6213948  
**Client No.:** A-018

Percent Asbestos:  
*PC 2.1 Chrysotile*

**Analyst Observation:** Off-White Joint  
Compound  
**Client Description:** Drywall Joint Compound  
Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 108  
**Facility:**  
Percent Non-Fibrous Material:  
97.9

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

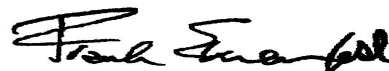
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**Analyst:** Randy Caran

**Approved By:**



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**Report Date:** 5/1/2017  
**Report No.:** 534882 - PLM  
**Project:** Asbestos Surveys - City of Saskatoon (Lions Arena)  
**Project No.:** 1667963

**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

**Lab No.:** 6213949  
**Client No.:** A-019

Percent Asbestos:  
*None Detected*

**Analyst Observation:** White Caulk  
**Client Description:** White Door Caulking

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 108  
**Facility:**

Percent Non-Fibrous Material:  
100

**Lab No.:** 6213950  
**Client No.:** A-020

Percent Asbestos:  
*None Detected*

**Analyst Observation:** White Caulk  
**Client Description:** White Pipe Caulking

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 107  
**Facility:**

Percent Non-Fibrous Material:  
100

**Lab No.:** 6213951  
**Client No.:** A-021

Percent Asbestos:  
*None Detected*

**Analyst Observation:** Grey Mastic  
**Client Description:** Grey Duct Mastic

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 107  
**Facility:**

Percent Non-Fibrous Material:  
100

**Lab No.:** 6213952  
**Client No.:** A-022

Percent Asbestos:  
*None Detected*

**Analyst Observation:** Grey Vinyl Sheet  
Flooring  
**Client Description:** Black and Grey Vinyl Sheet  
Flooring

Percent Non-Asbestos Fibrous Material:  
5 Cellulose

**Location:** Room 109  
**Facility:**

Percent Non-Fibrous Material:  
95

**Lab No.:** 6213952(L2)  
**Client No.:** A-022

Percent Asbestos:  
*None Detected*

**Analyst Observation:** Yellow Mastic  
**Client Description:** Black and Grey Vinyl Sheet  
Flooring

Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 109  
**Facility:**

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.

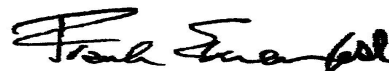
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**Project No.:** 1667963

**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

**Lab No.:** 6213953  
**Client No.:** A-023

**Analyst Observation:** Grey Leveling  
Compound  
**Client Description:** Grey Floor Leveling  
Compound

**Location:** Room 109  
**Facility:**

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6213954  
**Client No.:** A-024

**Analyst Observation:** White/Grey Mastic  
**Client Description:** White Duct Mastic

**Location:** Room 113  
**Facility:**

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6213955  
**Client No.:** A-025

**Analyst Observation:** Black Floor Tile  
**Client Description:** 1'X2' Black Floor Tile

**Location:** Room 112  
**Facility:**

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6213956  
**Client No.:** A-026

**Analyst Observation:** Grey Vinyl Sheet  
Flooring  
**Client Description:** Grey VSF with White and  
Black Specks

**Location:** Room 101  
**Facility:**

Percent Asbestos:  
*None Detected*

Percent Non-Asbestos Fibrous Material:  
None Detected

Percent Non-Fibrous Material:  
100

**Lab No.:** 6213956(L2)  
**Client No.:** A-026

**Analyst Observation:** White Mastic  
**Client Description:** Grey VSF with White and  
Black Specks

**Location:** Room 101  
**Facility:**

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.

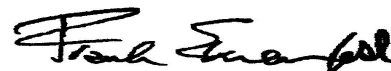
**Date Received:** 4/24/2017

**Date Analyzed:** 05/01/2017

**Signature:**

**Analyst:** Randy Caran

**Approved By:**



Frank E. Ehrenfeld, III  
Laboratory Director

## CERTIFICATE OF ANALYSIS

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

**Report Date:** 5/1/2017  
**Report No.:** 534882 - PLM  
**Project:** Asbestos Surveys - City of Saskatoon (Lions Arena)  
**Project No.:** 1667963

**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

**Lab No.:** 6213957  
**Client No.:** A-027  
Percent Asbestos:  
**PC 1.8 Chrysotile**

**Analyst Observation:** White Joint Compound  
**Client Description:** Drywall Joint Compound  
Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 110  
**Facility:**  
Percent Non-Fibrous Material:  
98.2

**Lab No.:** 6213958  
**Client No.:** A-028  
Percent Asbestos:  
**None Detected**

**Analyst Observation:** Black Mastic  
**Client Description:** Black Floor Mastic  
Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Rink  
**Facility:**  
Percent Non-Fibrous Material:  
100

**Lab No.:** 6213959  
**Client No.:** A-029  
Percent Asbestos:  
**None Detected**

**Analyst Observation:** Grey Putty  
**Client Description:** Brown Floor Putty  
Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Rink  
**Facility:**  
Percent Non-Fibrous Material:  
100

**Lab No.:** 6213960  
**Client No.:** A-030  
Percent Asbestos:  
**None Detected**

**Analyst Observation:** Black Floor Tile  
**Client Description:** Black Bleacher Vinyl  
Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Rink  
**Facility:**  
Percent Non-Fibrous Material:  
100

**Lab No.:** 6213961  
**Client No.:** A-031  
Percent Asbestos:  
**PC 1.2 Actinolite**

**Analyst Observation:** Grey Vermiculite  
**Client Description:** Vermiculite  
Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 113  
**Facility:**  
Percent Non-Fibrous Material:  
98.8

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)

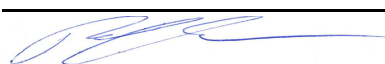
**Lab No.:** 6213962  
**Client No.:** A-032  
Percent Asbestos:  
**PC 1.2 Actinolite**

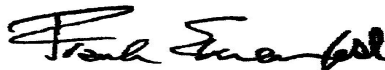
**Analyst Observation:** Brown/Grey Vermiculite  
**Client Description:** Vermiculite  
Percent Non-Asbestos Fibrous Material:  
None Detected

**Location:** Room 112A  
**Facility:**  
Percent Non-Fibrous Material:  
98.8

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)

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

**Date Received:** 4/24/2017  
**Date Analyzed:** 05/01/2017  
**Signature:**   
**Analyst:** Randy Caran

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

## CERTIFICATE OF ANALYSIS

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

**Report Date:** 5/1/2017  
**Report No.:** 534882 - PLM  
**Project:** Asbestos Surveys - City of Saskatoon (Lions Arena)  
**Project No.:** 1667963

**Client:** GOL572

### PLM BULK SAMPLE ANALYSIS SUMMARY

**Lab No.:** 6213963

**Client No.:** A-033

Percent Asbestos:

*PC 1.5 Actinolite*

**Analyst Observation:** Grey Vermiculite

**Client Description:** Vermiculite

Percent Non-Asbestos Fibrous Material:

None Detected

**Location:** Room 104

**Facility:**

Percent Non-Fibrous Material:

98.5

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.:** 6213964

**Client No.:** A-034

Percent Asbestos:

*None Detected*

**Analyst Observation:** White Caulk

**Client Description:** White Penetration Caulking

Percent Non-Asbestos Fibrous Material:

None Detected

**Location:** Exterior

**Facility:**

Percent Non-Fibrous Material:

100

**Lab No.:** 6213965

**Client No.:** A-035

Percent Asbestos:

*None Detected*

**Analyst Observation:** Blue/White Caulk

**Client Description:** Green Building Caulking

Percent Non-Asbestos Fibrous Material:

None Detected

**Location:** Exterior

**Facility:**

Percent Non-Fibrous Material:

100

**Lab No.:** 6213966

**Client No.:** A-036

Percent Asbestos:

*None Detected*

**Analyst Observation:** Grey Caulk

**Client Description:** Grey Firestop

Percent Non-Asbestos Fibrous Material:

None Detected

**Location:** Exterior

**Facility:**

Percent Non-Fibrous Material:

100

**Lab No.:** 6213967

**Client No.:** A-037

Percent Asbestos:

*None Detected*

**Analyst Observation:** Grey/White Caulk

**Client Description:** White Building Caulk

Percent Non-Asbestos Fibrous Material:

None Detected

**Location:** Exterior

**Facility:**

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.

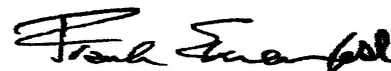
**Date Received:** 4/24/2017

**Date Analyzed:** 05/01/2017

**Signature:**

**Analyst:** Randy Caran

**Approved By:**



Frank E. Ehrenfeld, III

Laboratory Director

## CERTIFICATE OF ANALYSIS

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

**Report Date:** 5/1/2017  
**Report No.:** 534882 - PLM  
**Project:** Asbestos Surveys - City of Saskatoon (Lions Arena)  
**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.

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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:** 5/1/2017  
**Report No.:** 534882 - PLM  
**Project:** Asbestos Surveys - City of Saskatoon (Lions Arena)  
**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 Drywall Joint Compound.**



**Photograph 2: Asbestos-Containing Vermiculite Insulation.**

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# **APPENDIX C**

## **Room by Room Spreadsheet**

Included/Ex cluded		Room #	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	B	B3	Mechanical Room	Walls	Interior Walls	Concrete Walls	High	No	No	No	Good																	
Included	B	B3	Mechanical Room	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	B	B3	Mechanical Room	Ceiling	Ceiling	Concrete	High	No	No	No	Good																	
Included	B	B3	Mechanical Room	Doors	Suspect Fire Door	Suspect Fire Door	High	Yes	No	Potential	Good	Not sampled as damage to the door would affect it's operational requirement.							Potential	No		Annually		Low	Inspect and sample if scheduled for removal.	1		
Included	B	B3	Mechanical Room	Ceiling Space	Ceiling Space	N/A	N/A	N/A	N/A	N/A	N/A	No ceiling space present																
Included	B	B3	Mechanical Room	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fibreglass and PVC fittings.																
Included	B	B3	Mechanical Room	Mechanical	Piping	Drain Lines	High	No	No	No	Good	Drain lines not insulated and no suspect packing observed.																
Included	B	B3	Mechanical Room	Electrical	Electrical Panels and Components	Electrical Panels and Components	High	Yes	No	Potential	Good	Not sampled due to safety concerns.																
Included	B	B3	Mechanical Room	Miscellaneous	Sheet Flooring	Loose Sheet Flooring Material	High	No	Yes	No	Good		Bulk	A-002	18-Apr-17													
Included	B	B3	Mechanical Room	Miscellaneous	Firestop	White Firestop	High	No	Yes	No	Good		Bulk	A-001	18-Apr-17													
Included	B	B2	Mechanical Room	Walls	Interior Walls	Concrete Walls	High	No	No	No	Good																	
Included	B	B2	Mechanical Room	Walls	Interior Walls	Black Wall Mastic	High	No	Yes	No	Good		Bulk	A-005	18-Apr-17													
Included	B	B2	Mechanical Room	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	B	B2	Mechanical Room	Ceiling	Ceiling	Concrete	High	No	No	No	Good																	
Included	B	B2	Mechanical Room	Doors	Suspect Fire Door	Suspect Fire Door	High	Yes	No	Potential	Good	Not sampled as damage to the door would affect it's operational requirement.							Potential	No		Annually		Low	Inspect and sample if scheduled for removal.	1		
Included	B	B2	Mechanical Room	Ceiling Space	Ceiling Space	N/A	N/A	N/A	N/A	N/A	N/A	No ceiling space present																
Included	B	B2	Mechanical Room	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fibreglass and PVC fittings.																
Included	B	B2	Mechanical Room	Mechanical	Piping	Drain Lines	High	No	No	No	Good	Drain lines not insulated and no suspect packing observed.																
Included	B	B2	Mechanical Room	Mechanical	Duct Work	Grey Duct Mastic	High	No	Yes	No	Good	Duct work not insulateded with suspect insulation.	Bulk	A-004	18-Apr-17													
Included	B	B2	Mechanical Room	Electrical	Electrical Panels and Components	Electrical Panels and Components	High	Yes	No	Potential	Good	Not sampled due to safety concerns.																
Included	B	B2	Mechanical Room	Miscellaneous	Firestop	Red Firestop	High	No	Yes	No	Good		Bulk	A-003	18-Apr-17													
Included	B	B2	Mechanical Room	Firestop	White Firestop	White Firestop	High	No	Yes	No	Good																	
Included	B	B1	Mechanical Room	Walls	Interior Walls	Concrete Walls	High	No	No	No	Good																	
Included	B	B1	Mechanical Room	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	B	B1	Mechanical Room	Ceiling	Ceiling	Concrete	High	No	No	No	Good																	
Included	B	B1	Mechanical Room	Ceiling Space	Ceiling Space	N/A	N/A	N/A	N/A	N/A	N/A	No ceiling space present																
Included	B	B1	Mechanical Room	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fibreglass and PVC fittings.																
Included	B	B1	Mechanical Room	Mechanical	Piping	Drain Lines	High	No	No	No	Good	Drain lines not insulated and no suspect packing observed.																
Included	B	B1	Mechanical Room	Mechanical	Duct Work	Duct Work	High	No	No	No	Good	Duct work not insulateded with suspect insulation.																
Included	B	B1	Mechanical Room	Miscellaneous	Firestop	Red Firestop	High	No	Yes	No	Good																	
Included	B	B1	Mechanical Room	Miscellaneous	Firestop	White Firestop	High	No	Yes	No	Good																	
Included	M	101	Lobby	Walls	Interior Walls	Block Wall	High	No	No	No	Good																	
Included	M	101	Lobby	Walls	Exterior and Perimeter Walls	Vermiculite	High	Yes	Yes	Yes	Good	Suspected to be located in exterior and perimeter walls.		VS-A-033		Actinolite	Vermiculite	1.2% to 1.5%	Yes	No	No	Annually	5	Moderate	Manage in place.	750 ft²	Photograph 2	Door Jamb
Included	M	101	Lobby	Floor	Floor	Grey Vinyl Sheet Flooring with White Metal Deck	High	No	Yes	No	Good		Bulk	A-026	18-Apr-17													
Included	M	101	Lobby	Ceiling	Ceiling	Metal Deck	High	No	No	No	Good																	
Included	M	101	Lobby	Ceiling Space	Ceiling Space	N/A	N/A	N/A	N/A	N/A	N/A	No ceiling space present																
Included	M	101	Lobby	Doors	Regular Door	Non Suspect Door	High	No	No	No	Good	Non-suspect door.																
Included	M	101	Lobby	Mechanical	Duct Work	White Duct Mastic	High	No	Yes	No	Good	Duct work not insulateded with suspect insulation.																
Included	M	103	Admission	Walls	Interior Walls	Block Wall	High	No	No	No	Good	Block wall shared with Rink was observed to be hollow.																
Included	M	103	Admission	Walls	Exterior and Perimeter Walls	Vermiculite	High	Yes	Yes	Yes	Good	Suspected to be located in exterior and perimeter walls.		VS-A-033		Actinolite	Vermiculite	1.2% to 1.5%	Yes	No	No	Annually	5	Moderate	Manage in place.	265 ft²	Photograph 2	Door Jamb
Included	M	103	Admission	Walls	Interior Walls	Wood	High	No	No	No	Good																	
Included	M	103	Admission	Floor	Floor	Grey Vinyl Sheet Flooring with White Metal Deck	High	No	Yes	No	Good																	
Included	M	103	Admission	Ceiling	Ceiling	2'x4' Ceiling Tile with Small Pinholes	High	No	No	No	Good	Date coded to a time period in which asbestos use was not widespread.																
Included	M	103	Admission	Ceiling Space	Ceiling Space	Metal Deck	High	No	No	No	Good																	
Included	M	103	Admission	Doors	Regular Door	Non Suspect Door	High	No	No	No	Good	Non-suspect door.																
Included	M	103	Admission	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fibreglass and PVC fittings.																
Included	M	103	Admission	Mechanical	Duct Work	Grey Duct Mastic	High	No	Yes	No	Good	Duct work not insulateded with suspect insulation.																
Included	M	104	Washroom	Walls	Interior Walls	Block Wall	High	No	No	No	Good	Block wall shared with Room 101 was observed to be solid.																
Included	M	104	Washroom	Walls	Exterior Wall	Vermiculite	High	Yes	Yes	Yes	Good	Vermiculite located in block wall along the exterior.	Bulk	A-033	18-Apr-17	Actinolite	Vermiculite	1.2% to 1.5%	Yes	No	No	Annually	5	Moderate	Manage in place.	120 ft²	Photograph 2	Door Jamb
Included	M	104	Washroom	Floor	Floor	Grey Vinyl Sheet Flooring with White Metal Deck	High	No	Yes	No	Good																	
Included	M	104	Washroom	Ceiling	Ceiling	Metal Deck	High	No	No	No	Good																	
Included	M	104	Washroom	Ceiling Space	Ceiling Space	N/A	N/A	N/A	N/A	N/A	N/A	No ceiling space present																
Included	M	104	Washroom	Doors	Regular Door	Non Suspect Door	High	No	No	No	Good	Non-suspect door.																

Included	M	107	Office	Ceiling	Ceiling	2'x4' Ceiling Tile with Small Pinholes	High	No	No	No	Good	Date coded to a time period in which asbestos use was not widespread.																	
Included	M	107	Office	Ceiling Space	Ceiling Space	Metal Deck	High	No	No	No	Good																		
Included	M	107	Office	Doors	Regular Door	Non Suspect Door	High	No	No	No	Good	Non-suspect door.																	
Included	M	107	Office	Mechanical	Piping	Drain Lines	High	No	No	No	Good	Drain lines not insulated and no suspect packing observed.																	
Included	M	107	Office	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fiberglass and PVC fittings.																	
Included	M	107	Office	Mechanical	Duct Work	Grey Duct Mastic	High	No	Yes	No	Good	Duct work not insulateded with suspect insulation.	Bulk	A-021	18-Apr-17														
Included	M	107	Office	Miscellaneous	Firestop	White Firestop	High	No	Yes	No	Good		Bulk	A-020	18-Apr-17														
Included	M	108	Vestibule	Walls	Interior Walls	Block Wall	High	No	No	No	Good																		
Included	M	108	Vestibule	Walls	Exterior Wall	Vermiculite	High	Yes	Yes	Yes	Good	Suspected to be located in exterior and perimeter walls.		VS-A-033		Actinolite	Vermiculite	1.2% to 1.5%	Yes	No	No	Annually	5	Moderate	Manage in place.	100 ft²	Photograph 2	Door Jamb	
Included	M	108	Vestibule	Walls	Interior Walls	Drywall Walls	High	Yes	Yes	Yes	Good		Bulk	A-018	18-Apr-17	Chrysotile	Drywall Joint Compound	1.8% to 2.1%	Yes	No	No	Annually	5	High	Manage in place.	210 ft²	Photograph 1	Door Jamb	
Included	M	108	Vestibule	Floor	Floor	Black and Grey Vinyl Sheet Flooring	High	No	Yes	No	Good																		
Included	M	108	Vestibule	Ceiling	Ceiling	2'x4' Ceiling Tile with Small Pinholes	High	No	No	No	Good	Date coded to a time period in which asbestos use was not widespread.																	
Included	M	108	Vestibule	Ceiling Space	Ceiling Space	Metal Deck	High	No	No	No	Good																		
Included	M	108	Vestibule	Doors	Regular Door	Non Suspect Door	High	No	No	No	Good	Non-suspect door.																	
Included	M	108	Vestibule	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fiberglass and PVC fittings.																	
Included	M	108	Vestibule	Mechanical	Duct Work	Grey Duct Mastic	High	No	Yes	No	Good	Duct work not insulateded with suspect insulation.																	
Included	M	108	Vestibule	Miscellaneous	Door Caulking	White Door Caulking	High	No	Yes	No	Good		Bulk	A-019	18-Apr-17														
Included	M	109	Washroom	Walls	Interior Walls	Block Wall	High	No	No	No	Good																		
Included	M	109	Washroom	Walls	Interior Walls	Drywall Walls	High	Yes	Yes	Yes	Good		Bulk	A-017	18-Apr-17	Chrysotile	Drywall Joint Compound	1.8% to 2.1%	Yes	No	No	Annually	5	High	Manage in place.	210 ft²	Photograph 1	Door Jamb	
Included	M	109	Washroom	Floor	Floor	Black and Grey Vinyl Sheet Flooring	High	No	Yes	No	Good		Bulk	A-022	18-Apr-17														
Included	M	109	Washroom	Floor	Floor	Grey Floor Levelling Compound	High	No	Yes	No	Good		Bulk	A-023	18-Apr-17														
Included	M	109	Washroom	Ceiling	Ceiling	2'x4' Ceiling Tile with Small Pinholes	High	No	No	No	Good	Date coded to a time period in which asbestos use was not widespread.																	
Included	M	109	Washroom	Ceiling Space	Ceiling Space	Metal Deck	High	No	No	No	Good																		
Included	M	109	Washroom	Doors	Regular Door	Non Suspect Door	High	No	No	No	Good	Non-suspect door.																	
Included	M	109	Washroom	Mechanical	Piping	Drain Lines	High	No	No	No	Good	Drain lines not insulated and no suspect packing observed.																	
Included	M	109	Washroom	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fiberglass and PVC fittings.																	
Included	M	110	Office	Walls	Interior Walls	Block Wall	High	No	No	No	Good																		
Included	M	110	Office	Walls	Exterior Wall	Vermiculite	High	Yes	Yes	Yes	Good	Suspected to be located in exterior and perimeter walls.		VS-A-033		Actinolite	Vermiculite	1.2% to 1.5%	Yes	No	No	Annually	5	Moderate	Manage in place.	350 ft²	Photograph 2	Door Jamb	
Included	M	110	Office	Walls	Interior Walls	Drywall Walls	High	Yes	Yes	Yes	Good		Bulk	A-027	18-Apr-17	Chrysotile	Drywall Joint Compound	1.8% to 2.1%	Yes	No	No	Annually	5	High	Manage in place.	120 ft²	Photograph 1	Door Jamb	
Included	M	110	Office	Floor	Floor	Black and Grey Vinyl Sheet Flooring	High	No	Yes	No	Good																		
Included	M	110	Office	Ceiling	Ceiling	2'x4' Ceiling Tile with Small Pinholes	High	No	No	No	Good	Date coded to a time period in which asbestos use was not widespread.																	
Included	M	110	Office	Ceiling Space	Ceiling Space	Metal Deck	High	No	No	No	Good																		
Included	M	110	Office	Doors	Regular Door	Non Suspect Door	High	No	No	No	Good	Non-suspect door.																	
Included	M	110	Office	Mechanical	Duct Work	Grey Duct Mastic	High	No	Yes	No	Good	Duct work not insulateded with suspect insulation.																	
Included	M	110	Office	Mechanical	Piping	Drain Lines	High	No	No	No	Good	Drain lines not insulated and no suspect packing observed.																	
Included	M	110	Office	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fiberglass and PVC fittings.																	
Included	M	111	Change Room	Walls	Interior Walls	Block Wall	High	No	No	No	Good																		
Included	M	111	Change Room	Walls	Perimeter Wall	Vermiculite	High	Yes	Yes	Yes	Good	Suspected to be located in exterior and perimeter walls.		VS-A-033		Actinolite	Vermiculite	1.2% to 1.5%	Yes	No	No	Annually	5	Moderate	Manage in place.	200 ft²	Photograph 2	Door Jamb	
Included	M	111	Change Room	Floor	Floor	1'x2' Black Floor Tile	High	No	Yes	No	Good																		
Included	M	111	Change Room	Ceiling	Ceiling	Metal Deck	High	No	No	No	Good																		
Included	M	111	Change Room	Ceiling Space	Ceiling Space	N/A	N/A	N/A	N/A	N/A	N/A	No ceiling space present																	
Included	M	111	Change Room	Doors	Regular Door	Non Suspect Door	High	No	No	No	Good	Non-suspect door.																	
Included	M	111	Change Room	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fiberglass and PVC fittings.																	
Included	M	111	Change Room	Mechanical	Duct Work	White Duct Mastic	High	No	Yes	No	Good	Duct work not insulateded with suspect insulation.																	
Included	M	111A	Washroom	Walls	Interior Walls	Block Wall	High	No	No	No	Good																		
Included	M	111A	Washroom	Walls	Perimeter Wall	Vermiculite	High	Yes	Yes	Yes	Good	Suspected to be located in exterior and perimeter walls.		VS-A-033		Actinolite	Vermiculite	1.2% to 1.5%	Yes	No	No	Annually	5	Moderate	Manage in place.	60 ft²	Photograph 2	Door Jamb	
Included	M	111A	Washroom	Floor	Floor	1'x2' Black Floor Tile	High	No	Yes	No	Good																		
Included	M	111A	Washroom	Ceiling	Ceiling	Metal Deck	High	No	No	No	Good																		
Included	M	111A	Washroom	Ceiling Space	Ceiling Space	N/A	N/A	N/A	N/A	N/A	N/A	No ceiling space present																	
Included	M	111A	Washroom	Doors	Regular Door	Non Suspect Door	High	No	No	No	Good	Non-suspect door.																	
Included	M	111A	Washroom	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fiberglass and PVC fittings.																	
Included	M	111A	Washroom	Mechanical	Duct Work	White Duct Mastic	High	No	Yes	No	Good	Duct work not insulateded with suspect insulation.																	
Included	M	111B	Shower	Walls	Interior Walls	Ceramic Tile (Layer 1)	High	No	No	No	Good																		
Included	M	111B	Shower	Walls	Interior Walls	Block Wall (Layer 2)	High	No	No	No	Good																		
Included	M	111B	Shower	Floor	Floor	Ceramic Tile	High	No	No	No	Good																		
Included	M	111B	Shower	Ceiling	Ceiling	Metal Deck	High	No	No	No	Good																		
Included	M	111B	Shower	Ceiling Space	Ceiling Space	N/A	N/A	N/A	N/A	N/A	N/A	No ceiling space present																	
Included	M	111B	Shower	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fiberglass and PVC fittings.																	
Included	M	111B	Shower	Mechanical	Duct Work	White Duct Mastic	High	No	Yes	No	Good	Duct work not insulateded with suspect insulation.																	
Included	M	111B	Shower	Miscellaneous	Firestop	White Firestop	High	No	Yes	No	Good																		
Included	M	112	Change Room	Walls	Interior Walls	Block Wall	High	No	No	No	Good																		
Included	M	112	Change Room	Walls	Perimeter Wall	Vermiculite	High	Yes	Yes	Yes	Good	Suspected to be located in exterior and perimeter walls.		VS-A-033		Actinolite	Vermiculite	1.2% to 1.5%	Yes	No	No	Annually	5	Moderate	Manage in place.	200 ft²	Photograph 2	Door Jamb	
Included	M	112	Change Room	Floor	Floor	1'x2' Black Floor Tile	High	No	Yes	No	Good		Bulk	A-025	18-Apr-17														
Included	M	112	Change Room	Ceiling	Ceiling	Metal Deck	High	No	No	No	Good																		
Included	M	112	Change Room	Ceiling Space	Ceiling Space	N/A	N/A	N/A	N/A	N/A	N/A	No ceiling space present																	
Included	M	112	Change Room	Doors	Regular Door	Non Suspect Door	High	No	No	No	Good	Non-suspect door.																	
Included	M	112	Change Room	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fiberglass and PVC fittings.																	
Included	M	112	Change Room	Mechanical	Duct Work	White Duct Mastic	High	No	Yes	No	Good	Duct work not insulateded with suspect insulation.																	
Included	M	112A	Washroom	Walls	Interior Walls	Block Wall	High	No	No	No	Good																		
Included	M	112A	Washroom	Walls	Perimeter Wall	Vermiculite	High	Yes	Yes	Yes	Good	Vermiculite located in block wall shared with the Rink.	Bulk	A-032	18-Apr-17	Actinolite	Vermiculite	1.2% to 1.5%	Yes	No	No	Annually	5	Moderate	Manage in place.	60 ft²	Photograph 2	Door Jamb	
Included	M	112A	Washroom	Floor	Floor	1'x2' Black Floor Tile	High	No	Yes	No	Good																		
Included	M	112A	Washroom	Ceiling	Ceiling	Metal Deck	High	No	No	No	Good																		
Included	M	112A	Washroom	Ceiling Space	Ceiling Space	N/A	N/A	N/A	N/A	N/A	N/A	No ceiling space present																	
Included	M	112A	Washroom	Doors	Regular Door	Non Suspect Door	High	No	No	No	Good	Non-suspect door.																	
Included	M	112A	Washroom	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fiberglass and PVC fittings.																	

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Included	M	116B	Shower	Mechanical	Duct Work	White Duct Mastic	High	No	Yes	No	Good	Duct work not insulateded with suspect insulation.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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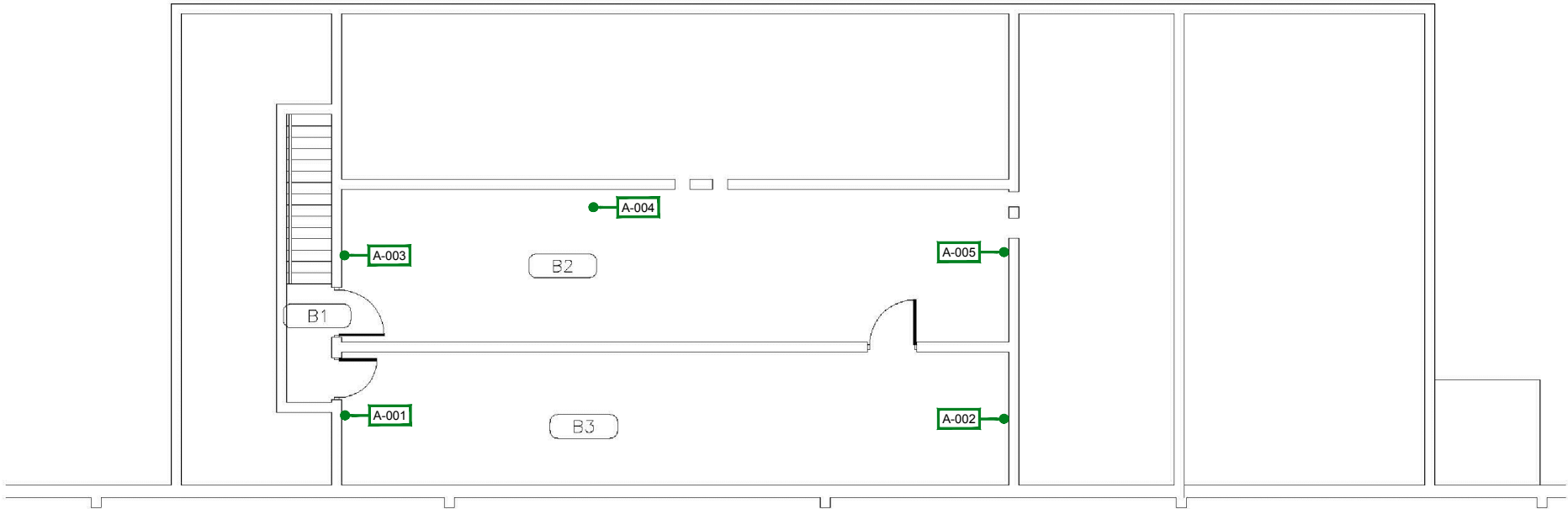
Included	M	123	Garage	Electrical	Electrical Panels and Components	Electrical Panels and Components	High	Yes	No	Potential	Good	Not sampled due to safety concerns.							No	No		Annually		Low	Inspect and sample if scheduled for removal.			
Included	M	124	Zamboni Room	Walls	Interior Walls	Block Wall	High	No	No	No	Good								No	No								
Included	M	124	Zamboni Room	Walls	Interior Walls	Drywall Walls	High	No	Yes	No	Poor		Bulk	A-009; A-010; A-011 A-012; and A-013	18-Apr-17													
Included	M	124	Zamboni Room	Walls	Interior Walls	Plastic Panels	High	No	No	No	Good																	
Included	M	124	Zamboni Room	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	M	124	Zamboni Room	Ceiling	Ceiling	Drywall Ceiling	Low	No	No	No	Good	Not specifically sampled due to height restriction.																
Included	M	124	Zamboni Room	Ceiling Space	Ceiling Space	N/A	N/A	N/A	N/A	N/A	N/A	Not assessed due to solid ceiling and heights.																
Included	M	124	Zamboni Room	Doors	Regular Door	Non Suspect Door	High	No	No	No	Good	Non-suspect door.																
Included	M	124	Zamboni Room	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fiberglass and PVC fittings.																
Included	M	124	Zamboni Room	Mechanical	Duct Work	Grey Duct Mastic	High	No	Yes	No	Good		Bulk	A-015	18-Apr-17													
Included	M	124	Zamboni Room	Miscellaneous	Caulking	White Plastic Panel Caulking	High	No	Yes	No	Good		Bulk	A-014	18-Apr-17													
Included	M	125	Rink	Walls	Interior Walls	Block Wall	High	No	No	No	Good	Block wall shared with Room 119 was observed to be solid.																
Included	M	125	Rink	Walls	Interior Walls	Wood	High	No	No	No	Good																	
Included	M	125	Rink	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	M	125	Rink	Floor	Floor	1'x2' Black Floor Tile	High	No	Yes	No	Poor																	
Included	M	125	Rink	Floor	Floor	Black Floor Mastic	High	No	Yes	No	Good		Bulk	A-028	18-Apr-17													
Included	M	125	Rink	Floor	Floor	Brown Floor Putty	High	No	Yes	No	Good		Bulk	A-029	18-Apr-17													
Included	M	125	Rink	Floor	Floor	Grey Vinyl Sheet Flooring with White	High	No	Yes	No	Good																	
Included	M	125	Rink	Ceiling	Ceiling	Metal Deck	High	No	No	No	Good																	
Included	M	125	Rink	Ceiling Space	Ceiling Space	N/A	N/A	N/A	N/A	N/A	N/A	No ceiling space present.																
Included	M	125	Rink	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fiberglass and PVC fittings.																
												Not sampled due to safety concerns.							No	No		Annually		Low	Inspect and sample if scheduled for removal.			
Included	M	125	Rink	Miscellaneous	Electrical Panels and Components	Electrical Panels and Components	High	Yes	No	Potential	Good		Bulk	A-030	18-Apr-17				No	No		Annually		Low	Inspect and sample if scheduled for removal.			
Included	E	Exterior	Exterior	Walls	Exterior Walls	Metal Cladded Walls	High	No	No	No	Good																	
Included	E	Exterior	Exterior	Walls	Exterior Walls	Block Walls	High	No	No	No	Good																	
Included	E	Exterior	Exterior	Miscellaneous	Caulking	White Pipe Penetration Caulking	High	No	Yes	No	Good		Bulk	A-034	18-Apr-17													
Included	E	Exterior	Exterior	Miscellaneous	Caulking	Green Building Caulking	High	No	Yes	No	Good		Bulk	A-035	18-Apr-17													
Included	E	Exterior	Exterior	Miscellaneous	Firestop	Grey Firestop	High	No	Yes	No	Good		Bulk	A-036	18-Apr-17													
Included	E	Exterior	Exterior	Miscellaneous	Caulking	White Building Caulking	High	No	Yes	No	Good		Bulk	A-037	18-Apr-17													
												Door was locked and access could not be provided. Asbestos-containing vermiculite is suspected to be located in the exterior walls.																
Excluded	M	102	Concession	Entire Room	Entire Room							Access to the entire room was prevented due to materials being stored within the room. Room was assessed from the doorway.																
												Not assessed due to accessibility. Located below concrete pads.																
Excluded	M	125	Pipe Chase	Crawlspace	Crawlspace							Not assessed due to accessibility																
Excluded		Exterior	Roof	Exterior Roof	Exterior Roof							Not assessed due to accessibility																



# **APPENDIX D**

## **Floor Plan**





NOTE(S)

- 1. ASBESTOS IS A CARCINOGEN. DO NOT BREATHE ASBESTOS DUST.
- 2. ASBESTOS-CONTAINING VERMICULITE INSULATION WAS IDENTIFIED IN SELECT LOCATIONS OF THE SITE. ADDITIONAL ASBESTOS-CONTAINING VERMICULITE INSULATION MAY BE LOCATED IN ADDITIONAL BLOCK WALL THROUGHOUT THE SITE.

LEGEND

- ASBESTOS - CONTAINING SAMPLE LOCATION
- CONFIRMED LOCATION OF ASBESTOS - CONTAINING VERMICULITE
- ASBESTOS - CONTAINING DRYWALL JOINT COMPOUND
- NO ACCESS
- SUSPECTED LOCATION OF ASBESTOS - CONTAINING VERMICULITE

REFERENCE(S)

PLAN OBTAINED FROM INFRASTRUCTURE SERVICES DEPARTMENT CITY OF SASKATOON. DATED BY JUNE 10, 2002.



CLIENT  
CITY OF SASKATOON

CONSULTANT

YYYY-MM-DD 2017-05-03

DESIGNED KH

PREPARED VI

REVIEWED KH

APPROVED AG

SCHEMATIC ONLY, NOT TO SCALE

PROJECT  
ASBESTOS ASSESSMENT  
LIONS ARENA  
2205 McEOWN AVENUE, SASKATOON

TITLE  
BASEMENT

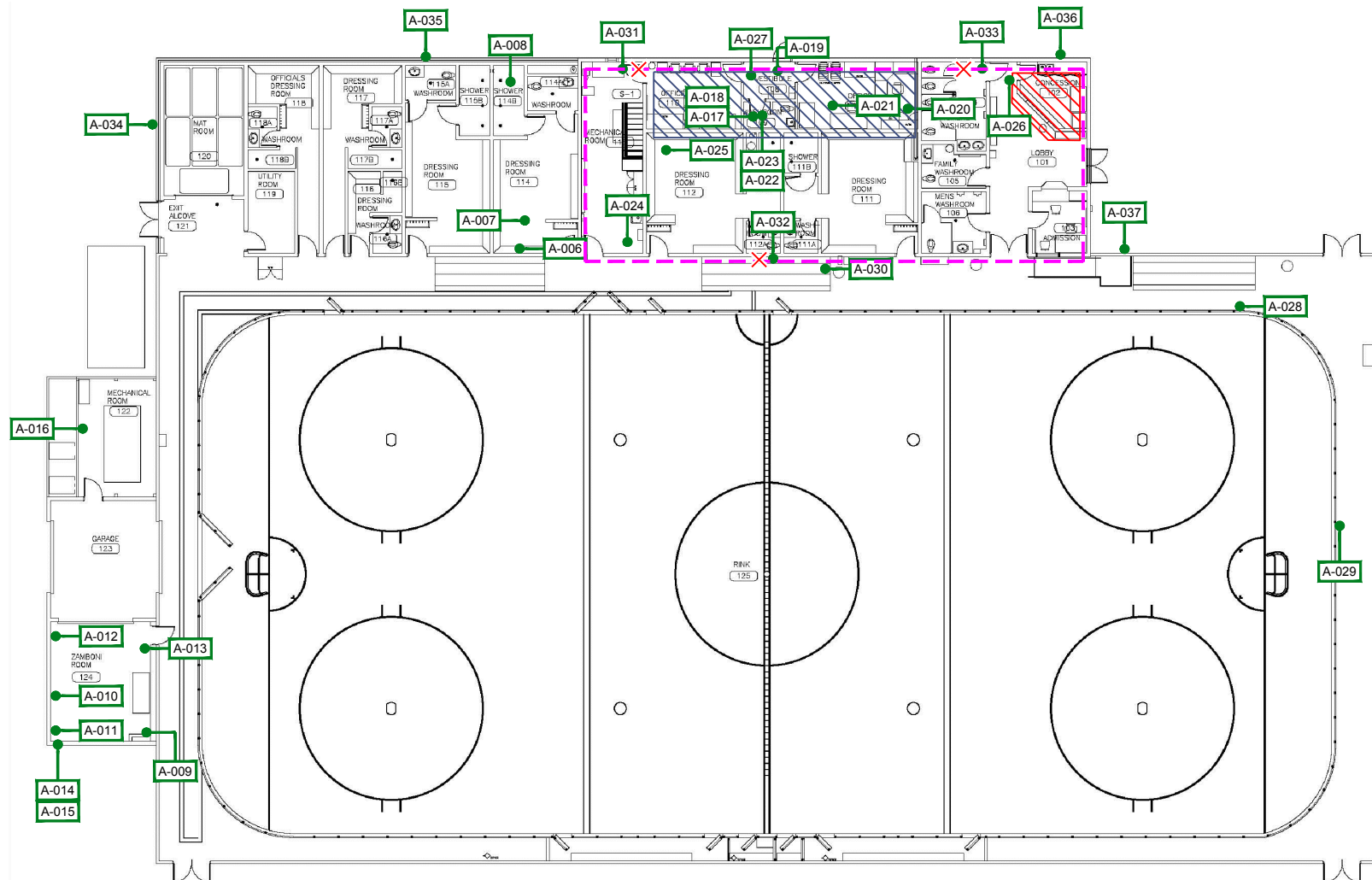
PROJECT NO. 1667963  
CONTROL 1000-HM-0001

REV. 0

FIGURE 1

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

25 mm



#### NOTE(S)

1. ASBESTOS IS A CARCINOGEN. DO NOT BREATHE ASBESTOS DUST.
2. ASBESTOS-CONTAINING VERMICULITE INSULATION WAS IDENTIFIED IN SELECT LOCATIONS OF THE SITE. ADDITIONAL ASBESTOS-CONTAINING VERMICULITE INSULATION MAY BE LOCATED IN ADDITIONAL BLOCK WALL THROUGHOUT THE SITE.

#### LEGEND

- # ASBESTOS SAMPLE LOCATION
- ✕ CONFIRMED LOCATION OF ASBESTOS - CONTAINING VERMICULITE
- ASBESTOS - CONTAINING DRYWALL JOINT COMPOUND
- NO ACCESS
- SUSPECTED LOCATION OF ASBESTOS - CONTAINING VERMICULITE

#### REFERENCE(S)

PLAN OBTAINED FROM INFRASTRUCTURE SERVICES DEPARTMENT CITY OF SASKATOON. DATED BY 10/11/2012.



CLIENT  
CITY OF SASKATOON

CONSULTANT

YYYY-MM-DD 2017-05-03  
 DESIGNED KH  
 PREPARED VI  
 REVIEWED KH  
 APPROVED AG

SCHEMATIC ONLY, NOT TO SCALE

PROJECT  
ASBESTOS ASSESSMENT  
LIONS ARENA  
2205 McEOWN AVENUE, SASKATOON

TITLE  
**MAIN FLOOR**

PROJECT NO.  
1667963

CONTROL  
1000-HM-0002

REV.  
0

FIGURE  
**2**

As a global, employee-owned organisation with over 50 years of experience, Golder Associates is driven by our purpose to engineer earth's development while preserving earth's integrity. We deliver solutions that help our clients achieve their sustainable development goals by providing a wide range of independent consulting, design and construction services in our specialist areas of earth, environment and energy.

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**T: +1 (780) 483 3499**



# Bersch Consulting Ltd.

April 9, 2020

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

**ATTENTION: Dean Buchholz**

**SUBJECT: Bulk Sample Analysis Report**


Please find attached the laboratory results for the bulk samples collected on April 7 & 8, 2020 from the Lions Arena in Saskatoon, SK. The samples were analyzed for the identification of asbestos. Asbestos **was** detected within 2 of 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. Thank you for this opportunity of service!

Sincerely,



Brad Berschiminsky  
**BERSCH CONSULTING LTD.**  
B67BLD07J lions arena

## Bulk Sample Analysis Report

April 9, 2020

Project Number: B67.20

Client: City of Saskatoon

Contact: Dean Buchholz

Location: Lions Arena

File Number: B67BAD07J lions arena

Sample Number	Sample Date	Sample Material	Sample Location and Information	Asbestos	%	Analyst
1	2020/04/07	Drainpipe	Ice Surface Concrete Slab Southeast Drain.	Amosite	30%	WB/EMSL
2	2020/04/07	Drainpipe	Ice Surface Concrete Slab Southwest Drain.	Amosite	30%	WB/EMSL
3	2020/04/08	Drain Tile	Ice Surface Weeping Tile Below the Slab along the North Side Running East & West.	No Asbestos Detected		WB/EMSL

**Note:** 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.

**Photo ID**

B67BAD07J - 001

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**Sample Number**

B67BAD07J – 1

Asbestos Containing

---

**Description**

Ice Surface

Southeast Drainpipe.

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**Photo ID**

B67BAD07J - 002

---

**Sample Number**

B67BAD07J – 2

Asbestos Containing

---

**Description**

Ice Surface

Southwest Drainpipe.

---





**Photo ID**

B67BAD07J - 003

---

**Sample Number**

B67BAD07J – 1 & 2

Asbestos Containing

---

**Description**

Ice Surface

Southwest Drainpipe.

---

**Photo ID**

B67PRK13I – 004

---

**Sample Number**

B67BAD07J – 3

Non Asbestos Containing

---

**Description**

Ice Surface

Weeping Tile Below the Slab along  
the North Side Running East &  
West.

This photo was taken from the  
sump pit in the basement  
mechanical room.

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