



December 7, 2017

CITY OF SASKATOON

Asbestos-Containing Building Materials Assessment Report - Fire Station No. 7



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 Fire Station No. 7 (the Site) located at 3550 Wanuskewin Road in Saskatoon, Saskatchewan. This assessment report details our findings, conclusions and recommendations for the Site. A walkthrough of the Site was conducted on June 21, 2017 and the assessment was conducted on October 11, 2017 by Scott Bishop, Junior Occupational Hygienist, and Kody Henderson, OHS Project Manager. Asbestos-containing building materials were identified within Fire Station No. 7 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

Fire Station No. 7 consists of offices, change rooms, storage rooms, washrooms, an exercise area, a garage, and mechanical rooms and was constructed in 1987. The interior architectural finishes of Room 113 were reportedly renovated in 2000. During the assessment, the architectural finishes within Room 113 were treated as one functional space while the remainder of the building was treated as a second 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 thirty-five (35) samples of building materials were collected and tested for asbestos content during the assessment of Fire Station No. 7. Two (2) of the samples were found to contain asbestos.

Potential asbestos-containing components may be located within the electrical panels on Site. Additionally, potential asbestos-containing brown and beige mastic was observed at inaccessible heights within Room 102.

3.1.1 List of Identified Asbestos-Containing Materials

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

- Black Window Caulking; and
- Red/Brown Duct Mastic.

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

Black Window Caulking

Two (2) samples of black window caulking were collected during the assessment. One of the samples collected was found to contain 3.8% Chrysotile asbestos. Asbestos-containing black window caulking (see Photograph 1 in Appendix B) was observed in the following location:

- Room 120 (approximately 10 linear feet).

Red/Brown Duct Mastic

One (1) sample of red/brown duct mastic was collected during the assessment. The sample collected was found to contain 3.4% Chrysotile asbestos. Asbestos-containing red/brown duct mastic (see Photograph 2 in Appendix B) was observed in the following locations:

- Room 109 (approximately 15 linear feet);
- Room 110 (approximately 40 linear feet);
- Room 113 (approximately 5 linear feet);



- Room 114 (approximately 3 linear feet);
- Room 116 (approximately 5 linear feet);
- Room 117 (approximately 20 linear feet);
- Room 118 (approximately 5 linear feet);
- Room 119 (approximately 3 linear feet);
- Room 121 (approximately 3 linear feet);
- Room 122 (approximately 3 linear feet); and
- Room 123/124 (approximately 3 linear feet).

Please note the red dust mastic located within Room 120 (associated with the vehicle exhaust line) is visually different than the asbestos-containing red/brown duct mastic and was sampled and found to not contain asbestos.

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 non-suspect materials:

- Beige, white, and blue vinyl sheet flooring;
- Beige and grey mosaic vinyl sheet flooring;
- Yellow floor mastic;
- Beige firestop;
- Pipe-fitting insulation;
- Drywall joint compound;
- Red duct mastic;
- White floor levelling compound;
- Black window frame caulking;
- Grey building caulking;
- Light grey pipe caulking;
- Black exterior window caulking;
- Brick mortar;
- Grey firestop;
- Grey door caulking;
- The 2'x4' textured ceiling tiles were date coded to a time period in which asbestos use was not widespread;



- The drain lines were observed to have clamps and are not suspected to have asbestos-containing packing;
- The ducts and pipe-runs were observed to be insulated with fibreglass insulation in select locations;
- The ceiling deck was observed to be un-insulated; and
- The walls were observed to be constructed of concrete block and drywall with non-asbestos-containing drywall joint compound, with non-asbestos-containing ceiling tiles and drywall joint compound on drywall ceilings. The flooring was observed to be concrete, carpet, or a non-asbestos-containing vinyl sheet flooring.

4.0 EXCLUDED AREAS AND MATERIALS

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

- 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 concrete block walls were not inspected by Golder during the assessment. If the concrete block walls are to be removed or impacted by future renovation or demolition activities, additional investigation and sampling of suspect materials may be required.
- The brown and beige mastic within Room 102 were not sampled by Golder during the assessment as they were located in an inaccessible location at heights. If the mastics are to be removed or impacted by future renovation or demolition activities, additional investigation and sampling may be required.
- The electrical panels and associated components were not inspected by Golder during the assessment. If the panels 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 black window caulking and red/brown duct mastic on Site. Asbestos was not identified in the remaining samples collected and analyzed.

If the building is scheduled for renovations that will impact the identified or potential 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.



ASBESTOS-CONTAINING BUILDING MATERIALS ASSESSMENT REPORT - FIRE STATION NO. 7

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.

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.

Red/Brown Duct Mastic

If scheduled for impact, asbestos-containing red/brown duct mastic should be abated following low-risk abatement work procedures as outlined in the *Saskatchewan Asbestos Abatement Manual* (2017). Alternatively, as the red/brown duct mastic 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.

6.0 SURVEY LIMITATIONS

This report is based on data and information collected by Golder during the assessment conducted on October 11, 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.



ASBESTOS-CONTAINING BUILDING MATERIALS ASSESSMENT REPORT - FIRE STATION NO. 7

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. 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 - FIRE STATION NO. 7

Report Signature Page

GOLDER ASSOCIATES LTD.

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Reviewed by:

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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: 10/27/2017
Report No.: 550069 - PLM
Project: Fire Hall 7
Project No.: 1667963

Rev #2, 10/30/2017

Client: GOL572

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6369402
Client No.: A-001

Analyst Observation: White/Blue Vinyl Sheet Flooring
Client Description: Beige, White And Blue Vinyl Sheet Flooring
Percent Non-Asbestos Fibrous Material:
10 Cellulose
5 Fibrous Glass

Location: Rm 107
Facility:

Percent Asbestos:
None Detected

Percent Non-Fibrous Material:
85

Lab No.: 6369402(L2)
Client No.: A-001

Analyst Observation: Yellow Mastic
Client Description: Beige, White And Blue Vinyl Sheet Flooring
Percent Non-Asbestos Fibrous Material:
5 Cellulose

Location: Rm 107
Facility:

Percent Asbestos:
None Detected

Percent Non-Fibrous Material:
95

Lab No.: 6369403
Client No.: A-002

Analyst Observation: White/Blue Vinyl Sheet Flooring
Client Description: Beige And Grey Mosaic Vinyl Sheet Flooring
Percent Non-Asbestos Fibrous Material:
10 Cellulose
5 Fibrous Glass

Location: Rm 107
Facility:

Percent Asbestos:
None Detected

Percent Non-Fibrous Material:
85

Lab No.: 6369403(L2)
Client No.: A-002

Analyst Observation: Yellow Mastic
Client Description: Beige And Grey Mosaic Vinyl Sheet Flooring
Percent Non-Asbestos Fibrous Material:
5 Cellulose

Location: Rm 107
Facility:

Percent Asbestos:
None Detected

Percent Non-Fibrous Material:
95

Lab No.: 6369404
Client No.: A-003

Analyst Observation: Tan Insulation
Client Description: Beige Firestop
Percent Non-Asbestos Fibrous Material:
None Detected

Location: Rm 103
Facility:

Percent Asbestos:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 6369405
Client No.: A-004


Analyst Observation: Grey Insulation
Client Description: Pipe-Fitting Insulation
Percent Non-Asbestos Fibrous Material:
10 Mineral Wool

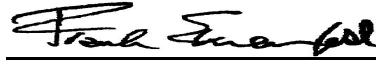
Location: Rm 102
Facility:

Percent Asbestos:
None Detected

Percent Non-Fibrous Material:
90

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

Date Received: 10/18/2017
Date Analyzed: 10/27/2017
Signature: 
Analyst: Christopher Bistline

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director

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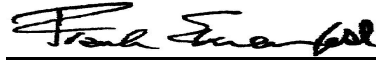
Client: GOL572

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6369406 Client No.: A-005	Analyst Observation: Grey Insulation Client Description: Pipe-Fitting Insulation	Location: Rm 102 Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> 5 Mineral Wool	<u>Percent Non-Fibrous Material:</u> 95
Lab No.: 6369407 Client No.: A-006	Analyst Observation: Grey Insulation Client Description: Pipe-Fitting Insulation	Location: Rm 102 Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> 5 Cellulose	<u>Percent Non-Fibrous Material:</u> 95
Lab No.: 6369408 Client No.: A-007	Analyst Observation: Grey Insulation Client Description: Pipe-Fitting Insulation	Location: Rm 102 Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> 5 Mineral Wool	<u>Percent Non-Fibrous Material:</u> 95
Lab No.: 6369409 Client No.: A-008	Analyst Observation: Grey Insulation Client Description: Pipe-Fitting Insulation	Location: Rm 102 Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> 5 Cellulose	<u>Percent Non-Fibrous Material:</u> 95
Lab No.: 6369410 Client No.: A-009	Analyst Observation: Grey Insulation Client Description: Pipe-Fitting Insulation	Location: Rm 102 Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> 5 Mineral Wool 5 Cellulose	<u>Percent Non-Fibrous Material:</u> 90
Lab No.: 6369411 Client No.: A-010	Analyst Observation: White Joint Compound Client Description: Drywall Joint Compound	Location: Rm 101 Facility:
<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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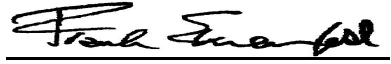
Client: GOL572

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6369412 Client No.: A-011 <u>Percent Asbestos:</u> <i>None Detected</i>	Analyst Observation: Red Mastic Client Description: Red Duct Mastic <u>Percent Non-Asbestos Fibrous Material:</u> 5 Cellulose	Location: Rm 120 Facility: <u>Percent Non-Fibrous Material:</u> 95
Lab No.: 6369413 Client No.: A-012 <u>Percent Asbestos:</u> <i>PC 3.8 Chrysotile</i>	Analyst Observation: Black Caulk Client Description: Black Window Caulking <u>Percent Non-Asbestos Fibrous Material:</u> 10 Cellulose	Location: Rm 120 Facility: <u>Percent Non-Fibrous Material:</u> 86.2
Lab No.: 6369414 Client No.: A-013 <u>Percent Asbestos:</u> <i>None Detected</i>	Analyst Observation: Grey Insulation Client Description: Pipe-Fitting Insulation <u>Percent Non-Asbestos Fibrous Material:</u> 5 Mineral Wool	Location: Rm 108 Facility: <u>Percent Non-Fibrous Material:</u> 95
Lab No.: 6369415 Client No.: A-014 <u>Percent Asbestos:</u> <i>None Detected</i>	Analyst Observation: White/Yellow Leveling Compound Client Description: White Floor Leveling Compound <u>Percent Non-Asbestos Fibrous Material:</u> None Detected	Location: Rm 123 Facility: <u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369416 Client No.: A-015 <u>Percent Asbestos:</u> <i>None Detected</i>	Analyst Observation: White/Off-White Sheetrock/Joint Compound Client Description: Drywall Joint Compound <u>Percent Non-Asbestos Fibrous Material:</u> 5 Cellulose	Location: Rm 124; Composite Facility: <u>Percent Non-Fibrous Material:</u> 95
Lab No.: 6369416(L2) Client No.: A-015 <u>Percent Asbestos:</u> <i>None Detected</i>	Analyst Observation: Yellow Mastic Client Description: Drywall Joint Compound <u>Percent Non-Asbestos Fibrous Material:</u> None Detected	Location: Rm 124; Composite Facility: <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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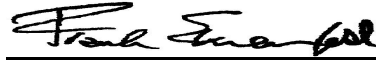
Client: GOL572

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6369417 Client No.: A-016 <u>Percent Asbestos:</u> <i>None Detected</i>	Analyst Observation: Black Caulk Client Description: Black Window Caulking <u>Percent Non-Asbestos Fibrous Material:</u> 5 Cellulose	Location: Rm 110 Facility: <u>Percent Non-Fibrous Material:</u> 95
Lab No.: 6369418 Client No.: A-017 <u>Percent Asbestos:</u> <i>None Detected</i>	Analyst Observation: White Caulk Client Description: Drywall Joint Compound <u>Percent Non-Asbestos Fibrous Material:</u> None Detected	Location: Rm 111 Facility: <u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369419 Client No.: A-018 <u>Percent Asbestos:</u> <i>None Detected</i>	Analyst Observation: White Sheetrock/Joint Compound Client Description: Drywall Joint Compound <u>Percent Non-Asbestos Fibrous Material:</u> 10 Cellulose	Location: Rm 123; Composite Facility: <u>Percent Non-Fibrous Material:</u> 90
Lab No.: 6369419(L2) Client No.: A-018 <u>Percent Asbestos:</u> <i>None Detected</i>	Analyst Observation: Yellow Mastic Client Description: Drywall Joint Compound <u>Percent Non-Asbestos Fibrous Material:</u> None Detected	Location: Rm 123; Composite Facility: <u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369420 Client No.: A-019 <u>Percent Asbestos:</u> <i>None Detected</i>	Analyst Observation: White Joint Compound Client Description: Drywall Joint Compound <u>Percent Non-Asbestos Fibrous Material:</u> None Detected	Location: Rm 112 Facility: <u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369421 Client No.: A-020 <u>Percent Asbestos:</u> <i>None Detected</i>	Analyst Observation: White Joint Compound Client Description: Drywall Joint Compound <u>Percent Non-Asbestos Fibrous Material:</u> None Detected	Location: Rm 122 Facility: <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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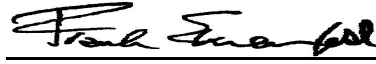
Client: GOL572

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6369422 Client No.: A-021	Analyst Observation: Grey Caulk Client Description: Grey Bldg Caulking	Location: Exterior Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369423 Client No.: A-022	Analyst Observation: Grey Caulk Client Description: Lt Grey Pipe Caulking	Location: Exterior Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369424 Client No.: A-023	Analyst Observation: Black Caulk Client Description: Black Window Caulking	Location: Exterior Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369425 Client No.: A-024	Analyst Observation: Black Caulk Client Description: Black Window Frame Caulking	Location: Exterior Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369426 Client No.: A-025	Analyst Observation: Grey Mortar Client Description: Brick Mortar	Location: Exterior Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369427 Client No.: A-026	Analyst Observation: Grey Mortar Client Description: Brick Mortar	Location: Exterior Facility:
<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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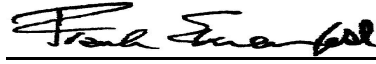
Client: GOL572

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6369428 Client No.: A-027	Analyst Observation: Grey Mortar Client Description: Brick Mortar	Location: Exterior Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369429 Client No.: A-028	Analyst Observation: Grey Mortar Client Description: Brick Mortar	Location: Exterior Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369430 Client No.: A-029	Analyst Observation: Grey Mortar Client Description: Brick Mortar	Location: Exterior Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369431 Client No.: A-030	Analyst Observation: Grey Caulk Client Description: Grey Firestop	Location: Exterior Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369432 Client No.: A-031	Analyst Observation: Grey Caulk Client Description: Grey Door Caulking	Location: Exterior Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369433 Client No.: A-032	Analyst Observation: White Joint Compound Client Description: Drywall Joint Compound	Location: Rm 113 Facility:
<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: 10/18/2017
Date Analyzed: 10/27/2017
Signature: 
Analyst: Christopher Bistline

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

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


Report Date: 10/27/2017
Report No.: 550069 - PLM
Project: Fire Hall 7
Rev #2, 10/30/2017
Project No.: 1667963

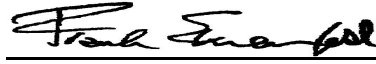
Client: GOL572

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6369433(L2) Client No.: A-032	Analyst Observation: Yellow Mastic Client Description: Drywall Joint Compound	Location: Rm 113 Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369434 Client No.: A-033	Analyst Observation: White Sheetrock Client Description: Drywall Joint Compound	Location: Rm 113 Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> 10 Cellulose	<u>Percent Non-Fibrous Material:</u> 90
Lab No.: 6369434(L2) Client No.: A-033	Analyst Observation: Dk. Yellow Mastic Client Description: Drywall Joint Compound	Location: Rm 113 Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369435 Client No.: A-034	Analyst Observation: White Sheetrock/Joint Compound Client Description: Drywall Joint Compound	Location: Rm 113; Composite Facility:
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> 5 Cellulose	<u>Percent Non-Fibrous Material:</u> 95
Lab No.: 6369436 Client No.: A-035	Analyst Observation: Red/Brown Mastic Client Description: Red/Brown Duct Mastic	Location: Rm 117 Facility:
<u>Percent Asbestos:</u> PC 3.4 Chrysotile	<u>Percent Non-Asbestos Fibrous Material:</u> 5 Cellulose	<u>Percent Non-Fibrous Material:</u> 91.6

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

Date Received: 10/18/2017
Date Analyzed: 10/27/2017
Signature: 
Analyst: Christopher Bistline

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

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

Client: GOL572

Report Date: 10/27/2017
Report No.: 550069 - PLM
Project: Fire Hall 7
Project No.: 1667963

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 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)>

CERTIFICATE OF ANALYSIS

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

Client: GOL572

Report Date: 10/27/2017
Report No.: 550069 - PLM
Project: Fire Hall 7
Project No.: 1667963

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

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.

- 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 gange, 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, United States Geological Survey (USGS) www.minerals.usgs.gov/minerals/, US EPA 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

CERTIFICATE OF ANALYSIS

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

Client: GOL572

Report Date: 10/27/2017
Report No.: 550069 - PLM
Project: Fire Hall 7
Project No.: 1667963

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 Black Window Caulking.



Photograph 2: Asbestos-Containing Red/Brown Duct Mastic.

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APPENDIX C

Fire Station No. 7 Room by Room Spreadsheet

Appendix C
Fire Station No. 7
ACM Inventory

Included/ Excluded	Floor	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	M	All	All	Doors	Regular Door	Non Suspect Door	High	No	No	No	Good	Non-suspect doors throughout the building.																
												Uninsulated ceiling deck observed throughout the building.																
Included	M	All	All	Ceiling	Ceiling Deck	Metal Deck	High	No	No	No	Good																	
Included	M	101	Inspectors	Walls	Walls	Drywall Joint Compound	High	No	Yes	No	Good		Bulk	A-010	11-Oct-17													
Included	M	101	Inspectors	Walls	Walls	Concrete Block	High	No	No	No	Good																	
Included	M	101	Inspectors	Floor	Floor	Carpet	High	No	No	No	Good																	
												Date coded to a time period in which asbestos use was not widespread.																
Included	M	101	Inspectors	Ceiling	Ceiling	2'x4' Textured Ceiling Tile	High	No	No	No	Good																	
														VS A-004, A-005, A-006, A-007, A-008, A-009, A-013														
Included	M	101	Inspectors	Mechanical	Piping	Pipe-Fitting Insulation	High	No	Yes	No	Good																	
Included	M	101	Inspectors	Mechanical	Duct	Bare Duct Work	High	No	No	No	Good																	
Included	M	102	Boiler Room	Walls	Walls	Concrete Block	High	No	No	No	Good																	
Included	M	102	Boiler Room	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	M	102	Boiler Room	Ceiling	Ceiling	Metal Deck	High	No	No	No	Good																	
Included	M	102	Boiler Room	Mechanical	Duct	Fibreglass Insulated Duct Work	High	No	No	No	Good																	
Included	M	102	Boiler Room	Mechanical	Tanks	Fibreglass Insulated Hot Water Tank	High	No	No	No	Good																	
														A-004, A-005, A-006, A-007, A-008, A-009														
Included	M	102	Boiler Room	Mechanical	Piping	Pipe-Fitting Insulation	High	No	Yes	No	Good		Bulk		11-Oct-17													
												Not sampled due to the material being inaccessible at heights.							No	No		Annually		Low	Inspect and sample if scheduled for removal.			
Included	M	102	Boiler Room	Mechanical	Duct	Brown and Beige Mastic	Low	Yes	No	Potential	Good									No				Low	Inspect and sample if scheduled for removal.			
												Not sampled due to safety concerns.								No	No	Annually		Low				
Included	M	102	Boiler Room	Electrical	Electrical	Electrical Panel and Components	High	Yes	No	Potential	Good									No	No	Annually		Low				
Included	M	103	Clothes Storage	Walls	Walls	Concrete Block	High	No	No	No	Good																	
Included	M	103	Clothes Storage	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	M	103	Clothes Storage	Ceiling	Ceiling	Metal Deck	High	No	No	No	Good																	
Included	M	103	Clothes Storage	Mechanical	Duct	Fibreglass Insulated and Unisulated Duct Work	High	No	No	No	Good																	
Included	M	103	Clothes Storage	Walls	Firestop	Beige Firestop	High	No	Yes	No	Good		Bulk	A-003	11-Oct-17													
														VS A-004, A-005, A-006, A-007, A-008, A-009, A-013														
Included	M	103	Clothes Storage	Mechanical	Piping	Pipe-Fitting Insulation	High	No	Yes	No	Good																	
Included	M	104	Hose Storage	Walls	Walls	Concrete Block	High	No	No	No	Good																	
Included	M	104	Hose Storage	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	M	104	Hose Storage	Ceiling	Ceiling	Metal Deck	High	No	No	No	Good																	
														VS A-004, A-005, A-006, A-007, A-008, A-009, A-013														
Included	M	104	Hose Storage	Mechanical	Piping	Pipe-Fitting Insulation	High	No	Yes	No	Good																	
Included	M	105	Storage Room	Walls	Walls	Concrete Block	High	No	No	No	Good																	
Included	M	105	Storage Room	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	M	105	Storage Room	Ceiling	Ceiling	Metal Deck	High	No	No	No	Good																	
														VS A-004, A-005, A-006, A-007, A-008, A-009, A-013														
Included	M	105	Storage Room	Mechanical	Piping	Pipe-Fitting Insulation	High	No	Yes	No	Good																	
Included	M	106	Storage Room	Walls	Walls	Concrete Block	High	No	No	No	Good																	
Included	M	106	Storage Room	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	M	106	Storage Room	Ceiling	Ceiling	Metal Deck	High	No	No	No	Good																	
Included	M	107	Vestibule	Walls	Walls	Concrete Block	High	No	No	No	Good																	
Included	M	107	Vestibule	Floor	Floor	Beige, White, and Blue Vinyl Sheet Flooring	High	No	Yes	No	Good		Bulk	A-001	11-Oct-17													
Included	M	107	Vestibule	Floor	Floor	Beige and Grey Mosaic Vinyl Sheet Flooring	High	No	Yes	No	Good		Bulk	A-002	11-Oct-17													
												Date coded to a time period in which asbestos use was not widespread.																
Included	M	107	Vestibule	Ceiling	Ceiling	2'x4' Textured Ceiling Tile	High	No	No	No	Good																	
														VS A-004, A-005, A-006, A-007, A-008, A-009, A-013														
Included	M	107	Vestibule	Mechanical	Piping	Pipe-Fitting Insulation	High	No	Yes	No	Good																	
Included	M	108	Hose Tower	Walls	Walls	Concrete Block	High	No	No	No	Good																	
Included	M	108	Hose Tower	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	M	108	Hose Tower	Ceiling	Ceiling	Metal Deck	High	No	No	No	Good																	
Included	M	108	Hose Tower	Mechanical	Piping	Pipe-Fitting Insulation	High	No	Yes	No	Good																	
													Bulk	A-013	11-Oct-17													
														VS A-010, A-015, A-017, A-018, A-019, A-020														
Included	M	109	Men's Dorm	Walls	Walls	Drywall Joint Compound	High	No	Yes	No	Good																	
Included	M	109	Men's Dorm	Walls	Walls	Concrete Block	High	No	No	No	Good																	
Included	M	109	Men's Dorm	Floor	Floor	Carpet	High	No	No	No	Good																	
Included	M	109	Men's Dorm	Floor	Floor	Beige and Grey Mosaic Vinyl Sheet Flooring	High	No	Yes	No	Good			VS A-002														
												Date coded to a time period in which asbestos use was not widespread.																
Included	M	109	Men's Dorm	Ceiling	Ceiling	2'x4' Textured Ceiling Tile	High	No	No	No	Good																	
Included	M	109	Men's Dorm	Windows	Caulking	Black Window Frame Caulking	High	No	Yes	No	Good			VS A-016														
Included	M	109	Men's Dorm	Mechanical	Duct	Red/Brown Duct Mastic	High	Yes	Yes	Yes	Good			VS A-035		Chrysotile	Red/Brown Duct Mastic	2.40%	No	No	No	Annually	5	Moderate	Manage in place.	Photograph 2	Door Jamb	
Included	M	110	Exercise Room	Walls	Walls	Concrete Block	High	No	No	No	Good																	
Included	M	110	Exercise Room	Floor	Floor	Rubber Mats	High	No	No	No	Good																	
												Date coded to a time period in which asbestos use was not widespread.																
Included	M	110	Exercise Room	Ceiling	Ceiling	2'x4' Textured Ceiling Tile	High	No	No	No	Good																	
Included	M	110	Exercise Room	Windows	Caulking	Black Window Frame Caulking	High	No	Yes	No	Good		Bulk	A-016	11-Oct-17													
Included	M	110	Exercise Room	Mechanical	Piping	Fibreglass Pipe Insulation	High	No	No	No	Good																	
Included	M	110	Exercise Room	Mechanical	Gaskets	Rubber Gaskets	High	No	No	No	Good																	
Included	M	110	Exercise Room	Mechanical	Duct	Red/Brown Duct Mastic	High	Yes	Yes	Yes	Good			VS A-035		Chrysotile	Red/Brown Duct Mastic	2.40%	No	No	No	Annually	5	Moderate	Manage in place.	Photograph 2	Door Jamb	
Included	M	111	Washroom	Walls	Walls	Concrete Block	High	No	No	No	Good																	
Included	M	111	Washroom	Floor	Floor	Ceramic Tile	High	No	No	No	Good																	
Included	M	111	Washroom	Ceiling	Ceiling	Drywall Joint Compound	High	No	Yes	No	Good		Bulk	A-017	11-Oct-17													
Included	M	112	Showers	Walls	Walls	Concrete Block	High	No	No	No	Good																	
Included	M	112	Showers	Floor	Floor	Ceramic Tile	High	No	No	No	Good																	
Included	M	112	Showers	Ceiling	Ceiling	Drywall Joint Compound	High	No	Yes	No	Good		Bulk	A-019	11-Oct-17													
														A-032, A-033, A-034	11-Oct-17													
Included	M	113	Women's Dorm	Walls	Walls	Drywall Joint Compound	High	No	Yes	No	Good																	
Included	M	113	Women's Dorm	Floor	Floor	Carpet	High	No	No	No	Good																	
												Date coded to a time period in which asbestos use was not widespread.																
Included	M	113	Women's Dorm	Ceiling	Ceiling	2'x4' Textured Ceiling Tile	High	No	No	No	Good																	
Included	M	113	Women's Dorm	Windows	Caulking	Black Window Frame Caulking</																						

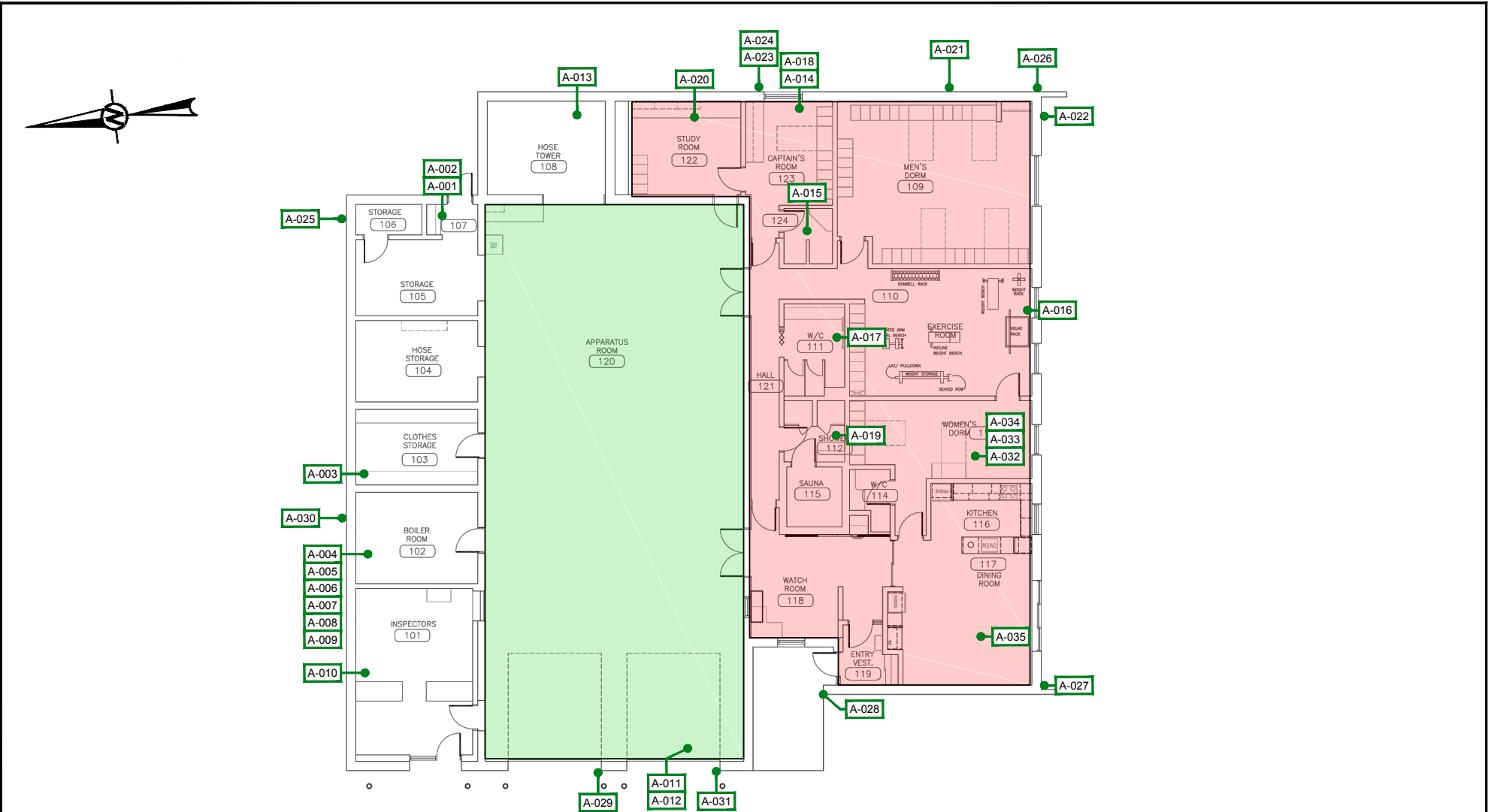
Appendix C
Fire Station No. 7
ACM Inventory

Included/ Excluded	Floor	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	M	116	Kitchen	Ceiling	Ceiling	2x4' Textured Ceiling Tile	High	No	No	No	Good	Date coded to a time period in which asbestos use was not widespread.																	
Included	M	116	Kitchen	Mechanical	Duct	Red/Brown Duct Mastic	High	Yes	Yes	Yes	Good			VS A-035		Chrysotile	Red/Brown Duct Mastic	2.40%	No	No	No	Annually	5	Moderate	Manage in place.		Photograph 2	Door Jamb	
Included	M	117	Dining Room	Walls	Walls	Concrete Block	High	No	No	No	Good			VS A-002															
Included	M	117	Dining Room	Floor	Floor	Beige and Grey Mosaic Vinyl Sheet Flooring	High	No	No	Yes	No	Good																	
Included	M	117	Dining Room	Ceiling	Ceiling	2x4' Textured Ceiling Tile	High	No	No	No	Good	Date coded to a time period in which asbestos use was not widespread.																	
Included	M	117	Dining Room	Walls	Caulking	Silicone Building Caulking	High	No	No	No	Good																		
Included	M	117	Dining Room	Mechanical	Duct	Red/Brown Duct Mastic	High	Yes	Yes	Yes	Good		Bulk	A-035	11-Oct-17	Chrysotile	Red/Brown Duct Mastic	2.40%	No	No	No	Annually	5	Moderate	Manage in place.		Photograph 2	Door Jamb	
Included	M	118	Watch Room	Walls	Walls	Concrete Block	High	No	No	No	Good			VS A-002															
Included	M	118	Watch Room	Floor	Floor	Beige and Grey Mosaic Vinyl Sheet Flooring	High	No	No	Yes	No	Good																	
Included	M	118	Watch Room	Ceiling	Ceiling	2x4' Textured Ceiling Tile	High	No	No	No	Good	Date coded to a time period in which asbestos use was not widespread.																	
Included	M	118	Watch Room	Mechanical	Piping	Fibreglass Insulated Piping	High	No	No	No	Good																		
Included	M	118	Watch Room	Windows	Caulking	Black Window Frame Caulking	High	No	No	Yes	No	Good		VS A-016															
Included	M	118	Watch Room	Mechanical	Duct	Red/Brown Duct Mastic	High	Yes	Yes	Yes	Good		VS A-035			Chrysotile	Red/Brown Duct Mastic	2.40%	No	No	No	Annually	5	Moderate	Manage in place.		Photograph 2	Door Jamb	
Included	M	119	Vestibule	Walls	Walls	Concrete Block	High	No	No	No	Good			VS A-002															
Included	M	119	Vestibule	Floor	Floor	Beige and Grey Mosaic Vinyl Sheet Flooring	High	No	No	Yes	No	Good																	
Included	M	119	Vestibule	Ceiling	Ceiling	2x4' Textured Ceiling Tile	High	No	No	No	Good	Date coded to a time period in which asbestos use was not widespread.																	
Included	M	119	Vestibule	Mechanical	Duct	Red/Brown Duct Mastic	High	Yes	Yes	Yes	Good		VS A-035			Chrysotile	Red/Brown Duct Mastic	2.40%	No	No	No	Annually	5	Moderate	Manage in place.		Photograph 2	Door Jamb	
Included	M	120	Apparatus Room	Walls	Walls	Concrete Block	High	No	No	No	Good																		
Included	M	120	Apparatus Room	Floor	Floor	Concrete	High	No	No	No	Good																		
Included	M	120	Apparatus Room	Ceiling	Ceiling	Metal Deck	High	No	No	No	Good	Date coded to a time period in which asbestos use was not widespread.																	
Included	M	120	Apparatus Room	Mechanical	Piping	Pipe-Fitting Insulation	High	No	Yes	No	Good			VS A-004, A-005, A-006, A-007, A-008, A-009, A-013															
Included	M	120	Apparatus Room	Mechanical	Duct	Red Duct Mastic	High	No	No	Yes	No	Good	Bulk	A-011	11-Oct-17														
Included	M	120	Apparatus Room	Windows	Caulking	Black Window Caulking	High	Yes	Yes	Yes	Good		Bulk	A-012	11-Oct-17	Chrysotile	Black Window Caulking	3.80%	No	No	No	Annually	5	Moderate	Manage in place.		Photograph 1	Door Jamb	
Included	M	121	Hallway	Walls	Walls	Concrete Block	High	No	No	No	Good			VS A-002															
Included	M	121	Hallway	Floor	Floor	Beige and Grey Mosaic Vinyl Sheet Flooring	High	No	No	Yes	No	Good																	
Included	M	121	Hallway	Ceiling	Ceiling	2x4' Textured Ceiling Tile	High	No	No	No	Good	Date coded to a time period in which asbestos use was not widespread.																	
Included	M	121	Hallway	Mechanical	Piping	Fibreglass Insulated Piping	High	No	No	No	Good																		
Included	M	121	Hallway	Mechanical	Duct	Red/Brown Duct Mastic	High	Yes	Yes	Yes	Good		VS A-035			Chrysotile	Red/Brown Duct Mastic	2.40%	No	No	No	Annually	5	Moderate	Manage in place.		Photograph 2	Door Jamb	
Included	M	122	Study Room	Walls	Walls	Drywall Joint Compound	High	No	Yes	No	Good		Bulk	A-020	11-Oct-17														
Included	M	122	Study Room	Walls	Walls	Concrete Block	High	No	No	No	Good																		
Included	M	122	Study Room	Floor	Floor	Carpet	High	No	No	No	Good																		
Included	M	122	Study Room	Floor	Floor	Beige and Grey Mosaic Vinyl Sheet Flooring	High	No	Yes	No	Good			VS A-002															
Included	M	122	Study Room	Ceiling	Ceiling	2x4' Textured Ceiling Tile	High	No	No	No	Good	Date coded to a time period in which asbestos use was not widespread.																	
Included	M	122	Study Room	Mechanical	Piping	Fibreglass Insulated or Uninsulated Piping	High	No	No	No	Good																		
Included	M	122	Study Room	Mechanical	Duct	Red/Brown Duct Mastic	High	Yes	Yes	Yes	Good		VS A-035			Chrysotile	Red/Brown Duct Mastic	2.40%	No	No	No	Annually	5	Moderate	Manage in place.		Photograph 2	Door Jamb	
Included	M	123	Captain's Room	Walls	Walls	Drywall Joint Compound	High	No	Yes	No	Good		Bulk	A-018	11-Oct-17														
Included	M	123	Captain's Room	Walls	Walls	Concrete Block	High	No	No	No	Good																		
Included	M	123	Captain's Room	Floor	Floor	Carpet	High	No	No	No	Good																		
Included	M	123	Captain's Room	Floor	Floor	Beige and Grey Mosaic Vinyl Sheet Flooring	High	No	Yes	No	Good		VS A-002																
Included	M	123	Captain's Room	Floor	Floor	White Floor Levelling Compound	High	No	Yes	No	Good		Bulk	A-014	11-Oct-17														
Included	M	123	Captain's Room	Ceiling	Ceiling	2x4' Textured Ceiling Tile	High	No	No	No	Good	Date coded to a time period in which asbestos use was not widespread.																	
Included	M	123	Captain's Room	Mechanical	Piping	Fibreglass Insulated or Uninsulated Piping	High	No	No	No	Good																		
Included	M	123	Captain's Room	Windows	Caulking	Black Window Frame Caulking	High	No	No	Yes	No	Good		VS A-016															
Included	M	123	Captain's Room	Mechanical	Duct	Red/Brown Duct Mastic	High	Yes	Yes	Yes	Good		VS A-035			Chrysotile	Red/Brown Duct Mastic	2.40%	No	No	No	Annually	5	Moderate	Manage in place.		Photograph 2	Door Jamb	
Included	M	124	Hallway	Walls	Walls	Drywall Joint Compound	High	No	Yes	No	Good		Bulk	A-015	11-Oct-17														
Included	M	124	Hallway	Floor	Floor	Carpet	High	No	No	No	Good																		
Included	M	124	Hallway	Floor	Floor	Beige, White, and Blue Vinyl Sheet Flooring	High	No	Yes	No	Good			VS A-001															
Included	M	124	Hallway	Ceiling	Ceiling	2x4' Textured Ceiling Tile	High	No	No	No	Good	Date coded to a time period in which asbestos use was not widespread.																	
Included	M	124	Hallway	Mechanical	Duct	Red/Brown Duct Mastic	High	Yes	Yes	Yes	Good			VS A-035			Chrysotile	Red/Brown Duct Mastic	2.40%	No	No	No	Annually	5	Moderate	Manage in place.		Photograph 2	Door Jamb
Included	E	Exterior	Exterior	Walls	Walls	Brick Mortar	High	No	Yes	No	Good		Bulk	A-025, A-026, A-027, A-028, A-029	11-Oct-17														
Included	E	Exterior	Exterior	Walls	Caulking	Grey Building Caulking	High	No	Yes	No	Good		Bulk	A-021	11-Oct-17														
Included	E	Exterior	Exterior	Walls	Caulking	Light Grey Pipe Caulking	High	No	Yes	No	Good		Bulk	A-022	11-Oct-17														
Included	E	Exterior	Exterior	Walls	Caulking	Black Window Caulking	High	No	Yes	No	Good		Bulk	A-023	11-Oct-17														
Included	E	Exterior	Exterior	Walls	Caulking	Black Window Frame Caulking	High	No	Yes	No	Good		Bulk	A-024	11-Oct-17														
Included	E	Exterior	Exterior	Walls	Firestop	Grey Firestop	High	No	Yes	No	Good		Bulk	A-030	11-Oct-17														
Included	E	Exterior	Exterior	Walls	Caulking	Grey Door Caulking	High	No	Yes	No	Good		Bulk	A-031	11-Oct-17														
Excluded		Exterior	Roof	Exterior Roof	Exterior Roof							Not assessed due to scope of work.																	



APPENDIX D

Floor Plan



LEGEND

- # ASBESTOS SAMPLE LOCATION
- ASBESTOS - CONTAINING DUCT MASTIC
- ASBESTOS - CONTAINING WINDOW CAULKING

NOTE(S)

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

REFERENCE(S)

PLAN OBTAINED FROM INFRASTRUCTURE SERVICES DEPARTMENT CITY OF SASKATOON. DATED: 23/12-2003

CLIENT
CITY OF SASKATOON

CONSULTANT



YYYY-MM-DD 2017-12-07

DESIGNED KH

PREPARED VI

REVIEWED KH

APPROVED AG

SCHEMATIC ONLY, NOT TO SCALE

PROJECT
ASBESTOS ASSESSMENT
FIRE STATION NO. 7
3550 WANUSKEWIN ROAD

TITLE
MAIN FLOOR

PROJECT NO.	CONTROL	REV.	FIGURE
1667963	1000-HM-0001	0	1

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

26 mm

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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