



December 5, 2017

CITY OF SASKATOON

Asbestos-Containing Building Materials Assessment Report - Fire Station No. 2



REPORT



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.





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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. 2 (the Site) located 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, by Kody Henderson, OHS Project Manager, and the assessment was conducted on October 15, 2017 by Scott Bishop, Junior Occupational Hygienist. Asbestos-containing building materials were identified within Fire Station No. 2 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. 2 consists of change rooms, a garage, offices, storage rooms, washroom and mechanical rooms, and was constructed in 1981. During the assessment, the entire building was treated as one 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 are 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 twenty-nine (29) samples of building materials were collected and tested for asbestos content during the assessment of Fire Station No. 2. Four (4) of the samples were found to contain asbestos.

Potential asbestos-containing materials and components may be located within the electrical panels on Site.

3.1.1 List of Identified Asbestos-Containing Materials

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

- Grey window caulking;
- Black window caulking;
- Orange and red vinyl sheet flooring; and
- Exterior black window caulking.

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

Grey Window Caulking

One (1) sample of grey window caulking was collected during the assessment. The sample collected was found to contain 10% Chrysotile asbestos. Asbestos-containing grey window caulking (see Photograph 1 in Appendix B) was observed in the following locations:

- Room 101 (approximately 60 linear ft); and
- Room 114 (approximately 15 linear ft).



Black Window Caulking

One (1) sample of black window caulking was collected during the assessment. The sample collected was found to contain 4.3% Chrysotile asbestos. Asbestos-containing black window caulking (see Photograph 2 in Appendix B) was observed in the following locations:

- Room 102 (approximately 15 linear ft); and
- Room 118 (approximately 15 linear ft).

Orange and Red Vinyl Sheet Flooring

One (1) sample of orange and red vinyl sheet flooring was collected during the assessment. The sample collected was found to contain 20% Chrysotile asbestos. Asbestos-containing orange and red vinyl sheet flooring (see Photograph 3 in Appendix B) was observed in the following locations:

- Room 112 (approximately 420 ft²); and
- Room 116 (approximately 100 ft²).

Exterior Black Window Caulking

One (1) sample of exterior black window caulking was collected during the assessment. The sample collected was found to contain 5.7% Chrysotile asbestos. Asbestos-containing exterior black window caulking (see Photograph 4 in Appendix B) was observed in the following locations:

- Exterior (approximately 100 linear ft).

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:

- Pipe-fitting insulation;
- Dark grey duct mastic;
- Grey firestop putty;
- Grey building caulking;
- White sink undercoat;
- Drywall joint compound;
- Red duct mastic;
- Beige with pink and blue vinyl sheet flooring;
- White window caulking;
- Brown door caulking;
- Exterior brick mortar;
- Exterior silver caulking on vent;



- Exterior grey caulking;
- Exterior light brown caulking; and
- Exterior white caulking.

4.0 EXCLUDED AREAS AND MATERIALS

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

- Building materials accessible by a ten foot ladder were assessed by Golder during the assessment. Materials located at heights that were inaccessible from a ten foot ladder were not assessed. If materials at heights are to be removed or impacted by future renovation or demolition activities, additional investigation and sampling of suspect materials may be required.
- 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 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 grey window caulking, black window caulking, and orange and red vinyl sheet flooring 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 asbestos-containing materials, it must be removed. If additional suspect asbestos-containing building materials are encountered during renovation activities, additional sampling should be undertaken to evaluate asbestos content.

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

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

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



Grey Window Caulking

If scheduled for impact, asbestos-containing grey window caulking should be abated following low-risk abatement work procedures as outlined in the *Saskatchewan Asbestos Abatement Manual (2017)*. Alternatively, as the 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), the caulking can be managed in place if not scheduled for impact.

Black Window Caulking

If scheduled for impact, asbestos-containing black window caulking should be abated following low-risk abatement work procedures as outlined in the *Saskatchewan Asbestos Abatement Manual (2017)*. Alternatively, as the 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), the caulking can be managed in place if not scheduled for impact.

Orange and Red Vinyl Sheet Flooring

If scheduled for impact, asbestos-containing orange and red vinyl sheet flooring should be abated following high-risk abatement work procedures as outlined in the *Saskatchewan Asbestos Abatement Manual (2017)*. Alternatively, as the sheet flooring was observed in good condition, below existing flooring, 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), the vinyl sheet flooring 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 15, 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.



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.



Report Signature Page

GOLDER ASSOCIATES LTD.

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Reviewed by:

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Associate, OHS Project Director

SWB/KH/AG/ba

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APPENDIX A

Laboratory Certificate of Analysis Report


REVISED CERTIFICATE OF ANALYSIS

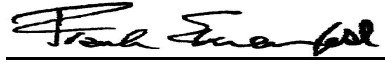
Client: Golder Associates Ltd 16820 107 Ave Edmonton AB T5P 4C3	Report Date: 10/29/2017 Report No.: 550066 - PLM Project: Fire Station 2 Project No.: 1667963	Rev #2, 10/30/2017
Client: GOL572		

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6369326 Client No.: A-001	Description: Grey Insulation Facility:	Location: Rm 119
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> 30 Fibrous Glass	<u>Percent Non-Fibrous Material:</u> 70
Lab No.: 6369327 Client No.: A-002	Description: Grey Insulation Facility:	Location: Rm 124
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> 30 Fibrous Glass	<u>Percent Non-Fibrous Material:</u> 70
Lab No.: 6369328 Client No.: A-003	Description: Dk Grey Mastic Facility:	Location: Rm 124
<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.: 6369329 Client No.: A-004	Description: Grey Putty Facility:	Location: Rm 124
<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.: 6369330 Client No.: A-005	Description: Grey Caulk Facility:	Location: Rm 124
<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.: 6369331 Client No.: A-006	Description: White Sink Undercoating Facility:	Location: Rm 125
<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: 10/29/2017
Signature: 
Analyst: Tiffany Lowe

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director


REVISED CERTIFICATE OF ANALYSIS

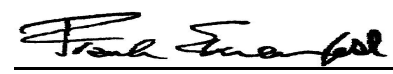
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Client: GOL572		

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6369332 Client No.: A-007	Description: White Joint Compound Facility:	Location: Rm 125
<u>Percent Asbestos:</u> None Detected	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369332(L2) Client No.: A-007	Description: Green Mastic Facility:	Location: Rm 125
<u>Percent Asbestos:</u> None Detected	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369333 Client No.: A-008	Description: Red Mastic Facility:	Location: Rm 118
<u>Percent Asbestos:</u> None Detected	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369333(L2) Client No.: A-008	Description: Clear Caulk Facility:	Location: Rm 118
<u>Percent Asbestos:</u> None Detected	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369334 Client No.: A-009	Description: Grey Insulation Facility:	Location: Rm 117
<u>Percent Asbestos:</u> None Detected	<u>Percent Non-Asbestos Fibrous Material:</u> 20 Fibrous Glass	<u>Percent Non-Fibrous Material:</u> 80
Lab No.: 6369335 Client No.: A-110	Description: Beige Vinyl Sheet Flooring Facility:	Location: Rm 115
<u>Percent Asbestos:</u> None Detected	<u>Percent Non-Asbestos Fibrous Material:</u> 10 Synthetic 10 Fibrous Glass	<u>Percent Non-Fibrous Material:</u> 80

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: Golder Associates Ltd 16820 107 Ave Edmonton AB T5P 4C3	Report Date: 10/29/2017 Report No.: 550066 - PLM Project: Fire Station 2 Project No.: 1667963	Rev #2, 10/30/2017
Client: GOL572		

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6369335(L2) Client No.: A-010	Description: Tan Mastic Facility:	Location: Rm 115
<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.: 6369336 Client No.: A-011	Description: Orange/Red Vinyl Sheet Flooring Facility:	Location: Rm 116
<u>Percent Asbestos:</u> <i>20 Chrysotile</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 80


Lab No.: 6369336(L2) Client No.: A-011	Description: Yellow Mastic Facility:	Location: Rm 116
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

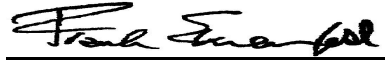
Lab No.: 6369336(L3) Client No.: A-011	Description: White Caulk Facility:	Location: Rm 116
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

Lab No.: 6369337 Client No.: A-012	Description: White Joint Compound Facility:	Location: Rm 116
<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.: 6369338 Client No.: A-013	Description: White Joint Compound Facility:	Location: Rm 113
<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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16820 107 Ave
Edmonton AB T5P 4C3


Report Date: 10/29/2017
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Project: Fire Station 2
Project No.: 1667963
Rev #2, 10/30/2017

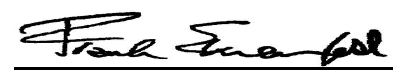
Client: GOL572

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6369339 Client No.: A-014	Description: White Caulk Facility:	Location: Rm 112
<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.: 6369340 Client No.: A-015	Description: White Sheetrock/Joint Compound Facility:	Location: Rm 114; Composite
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> 1 Cellulose	<u>Percent Non-Fibrous Material:</u> 99
Lab No.: 6369341 Client No.: A-016	Description: Grey Glazing Facility:	Location: Rm 114
<u>Percent Asbestos:</u> <i>10 Chrysotile</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 90
Lab No.: 6369342 Client No.: A-017	Description: Black Glazing Facility:	Location: Rm 118
<u>Percent Asbestos:</u> <i>PC 4.3 Chrysotile</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 95.7
Lab No.: 6369343 Client No.: A-018	Description: Brown Caulk Facility:	Location: Rm 103
<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.: 6369344 Client No.: A-019	Description: White Joint Compound Facility:	Location: Rm 106
<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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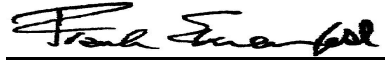
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Client: GOL572		

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6369345 Client No.: A-020	Description: Red Mortar Facility:	Location: Exterior
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369346 Client No.: A-021	Description: Red Mortar Facility:	Location: Exterior
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369347 Client No.: A-022	Description: Red Mortar Facility:	Location: Exterior
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369348 Client No.: A-023	Description: Red Mortar Facility:	Location: Exterior
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369349 Client No.: A-024	Description: Red Mortar Facility:	Location: Exterior
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100
Lab No.: 6369350 Client No.: A-025	Description: Silver Caulk Facility:	Location: Exterior
<u>Percent Asbestos:</u> <i>None Detected</i>	<u>Percent Non-Asbestos Fibrous Material:</u> None Detected	<u>Percent Non-Fibrous Material:</u> 100

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

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REVISED CERTIFICATE OF ANALYSIS

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

Report Date: 10/29/2017
Report No.: 550066 - PLM
Project: Fire Station 2
Project No.: 1667963
Rev #2, 10/30/2017

Client: GOL572

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6369351
Client No.: A-026
Description: Black Glazing
Facility:
Location: Exterior
Percent Asbestos:
PC 5.7 Chrysotile
Percent Non-Asbestos Fibrous Material:
None Detected
Percent Non-Fibrous Material:
94.3


Lab No.: 6369352
Client No.: A-027
Description: Lt Brown Caulk
Facility:
Location: Exterior
Percent Asbestos:
None Detected
Percent Non-Asbestos Fibrous Material:
5 Fibrous Glass
Percent Non-Fibrous Material:
95

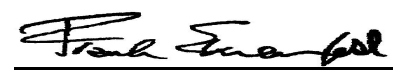
Lab No.: 6369352(L2)
Client No.: A-027
Description: Red Cementitious
Facility:
Location: Exterior
Percent Asbestos:
None Detected
Percent Non-Asbestos Fibrous Material:
None Detected
Percent Non-Fibrous Material:
100

Lab No.: 6369353
Client No.: A-028
Description: Lt Brown Caulk
Facility:
Location: Exterior
Percent Asbestos:
None Detected
Percent Non-Asbestos Fibrous Material:
None Detected
Percent Non-Fibrous Material:
100

Lab No.: 6369354
Client No.: A-029
Description: White Caulk
Facility:
Location: Exterior
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: 10/18/2017
Date Analyzed: 10/29/2017
Signature: 
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REVISED CERTIFICATE OF ANALYSIS

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

Report Date: 10/29/2017
Report No.: 550066 - PLM
Project: Fire Station 2
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 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)>

REVISED CERTIFICATE OF ANALYSIS

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

Report Date: 10/29/2017
Report No.: 550066 - PLM
Project: Fire Station 2
Project No.: 1667963

Client: GOL572

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

REVISED CERTIFICATE OF ANALYSIS

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

Client: GOL572

Report Date: 10/29/2017
Report No.: 550066 - PLM
Project: Fire Station 2
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

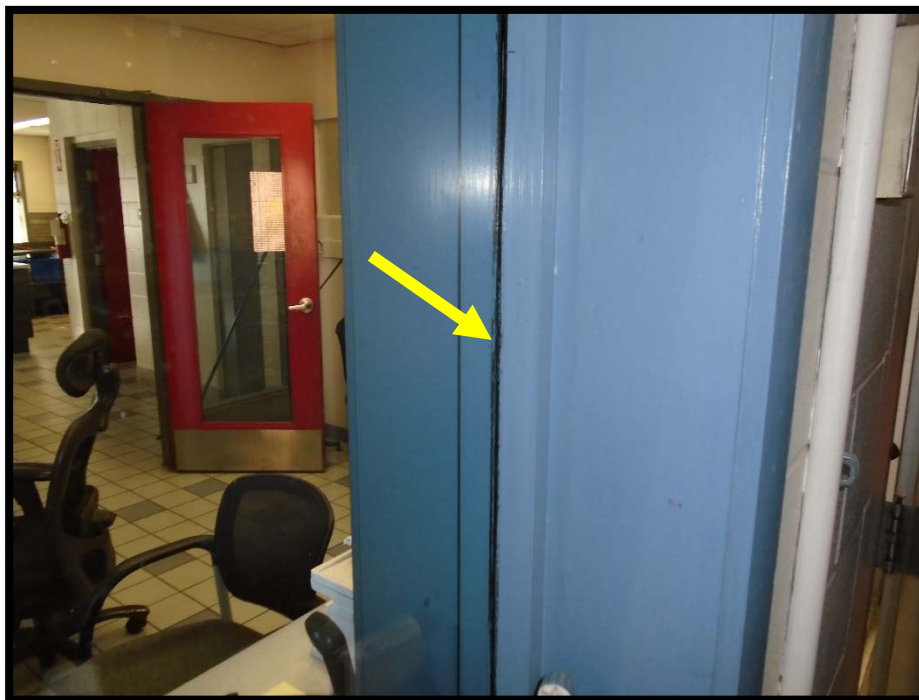
Site Photographs



APPENDIX B
Site Photographs



Photograph 1: Asbestos-Containing Grey Window Caulking.



Photograph 2: Asbestos-Containing Black Window Caulking.



APPENDIX B
Site Photographs



Photograph 3: Asbestos-Containing Vinyl Sheet Flooring, Orange and Red.



Photograph 4: Asbestos-Containing Exterior Black Window Caulking.

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APPENDIX C

Fire Station No. 2 Room by Room Spreadsheet

Appendix C
ACM Inventory
Fire Station No. 2

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	Throughout	Throughout	Door	Regular Door	Non Suspect Door	High	No	No	No	Good	Non-suspect doors were observed at the Site.																
Included	M	101	Entry Vestibule	Walls	Walls	Cinderblock	High	No	No	No	Good																	
Included	M	101	Entry Vestibule	Floor	Floor	Ceramic Tile	High	No	No	No	Good																	
Included	M	101	Entry Vestibule	Ceiling	Ceiling	2' x 4' Ceiling Tile	High	No	No	No	Good	Date coded to a time period where asbestos use was not widespread.																
Included	M	101	Entry Vestibule	Ceiling	Ceiling Space	Metal Q-Deck	High	No	No	No	Good	No spray-applied insulation.																
Included	M	101	Entry Vestibule	Windows	Caulking	Grey Caulking	High	No	Yes	Yes	Good	On window panes.	Bulk	V.S. A-016	15-Oct-17	Chrysotile	Caulking	10	No	No	N/A	Annually	5	High	Manage in place.	60 ft.	Photograph 1	
Included	M	101	Entry Vestibule	Mechanical	Piping	Insulation	High	No	Yes	No	Good	Insulation on pipe fittings.	Bulk	V.S. A-001, A-002, A-009	15-Oct-17													
Included	M	102	Watch Room	Walls	Walls	Cinderblock	High	No	No	No	Good																	
Included	M	102	Watch Room	Walls	Walls	Drywall	High	No	Yes	No	Good		Bulk	V.S. A-007, A-012, A-013, A-015, A-019	15-Oct-17													
Included	M	102	Watch Room	Floor	Floor	Ceramic Tile	High	No	No	No	Good																	
Included	M	102	Watch Room	Ceiling	Ceiling	2' x 4' Ceiling Tile	High	No	No	No	Good	Date coded to a time period where asbestos use was not widespread.																
Included	M	102	Watch Room	Ceiling	Ceiling Space	Metal Q-Deck	High	No	No	No	Good	No spray-applied insulation.																
Included	M	102	Watch Room	Windows	Caulking	Black Caulking	High	No	Yes	Yes	Good	On window panes.	Bulk	V.S. A-017	15-Oct-17	Chrysotile	Caulking	4.3	No	No	N/A	Annually	5	High	Manage in place.	15 ft.	Photograph 2	
Included	M	102	Watch Room	Mechanical	Piping	Insulation	High	No	Yes	No	Good	Insulation on pipe fittings.	Bulk	V.S. A-001, A-002, A-009	15-Oct-17													
Included	M	102	Watch Room	Mechanical	Duct Work	Duct Work	High	No	No	No	Good	Bare, uninsulated duct work.																
Included	M	103	Dining Room	Walls	Walls	Cinderblock	High	No	No	No	Good																	
Included	M	103	Dining Room	Walls	Walls	Drywall	High	No	Yes	No	Good		Bulk	V.S. A-007, A-012, A-013, A-015, A-019	15-Oct-17													
Included	M	103	Dining Room	Floor	Floor	Ceramic Tile	High	No	No	No	Good																	
Included	M	103	Dining Room	Ceiling	Ceiling	2' x 4' Ceiling Tile	High	No	No	No	Good	Date coded to a time period where asbestos use was not widespread.																
Included	M	103	Dining Room	Ceiling	Ceiling Space	Metal Q-Deck	High	No	No	No	Good	No spray-applied insulation.																
Included	M	103	Dining Room	Mechanical	Duct Work	Duct Work	High	No	No	No	Good	Bare, uninsulated duct work.																
Included	M	103	Dining Room	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fibreglass and PVC fittings.																
Included	M	103	Dining Room	Miscellaneous	Caulking	Brown Caulking	High	No	Yes	No	Good	On door frame.	Bulk	A-018	15-Oct-17													
Included	M	104	Kitchen	Walls	Walls	Cinderblock	High	No	No	No	Good																	
Included	M	104	Kitchen	Floor	Floor	Ceramic Tile	High	No	No	No	Good																	
Included	M	104	Kitchen	Ceiling	Ceiling	2' x 4' Ceiling Tile	High	No	No	No	Good	Date coded to a time period where asbestos use was not widespread.																
Included	M	104	Kitchen	Ceiling	Ceiling Space	Metal Q-Deck	High	No	No	No	Good	No spray-applied insulation.																
Included	M	104	Kitchen	Windows	Caulking	White Caulking	High	No	Yes	No	Good	On window frame.	Bulk	V.S. A-014	15-Oct-17													
Included	M	104	Kitchen	Mechanical	Duct Work	Duct Work	High	No	No	No	Good	Bare, uninsulated duct work.																
Included	M	104	Kitchen	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fibreglass and PVC fittings.																
Included	M	105	Washroom	Walls	Walls	Cinderblock	High	No	No	No	Good																	
Included	M	105	Washroom	Floor	Floor	Ceramic Tile	High	No	No	No	Good																	
Included	M	105	Washroom	Ceiling	Ceiling	2' x 4' Ceiling Tile	High	No	No	No	Good	Date coded to a time period where asbestos use was not widespread.																
Included	M	105	Washroom	Ceiling	Ceiling Space	Metal Q-Deck	High	No	No	No	Good	No spray-applied insulation.																
Included	M	105	Washroom	Mechanical	Duct Work	Duct Work	High	No	No	No	Good	Bare, uninsulated duct work.																
Included	M	105	Washroom	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fibreglass and PVC fittings.																
Included	M	106	Captains' Room	Walls	Walls	Drywall	High	No	Yes	No	Good		Bulk	A-019	15-Oct-17													
Included	M	106	Captains' Room	Floor	Floor	Carpet	High	No	No	No	Good																	
Included	M	106	Captains' Room	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	M	106	Captains' Room	Ceiling	Ceiling	2' x 4' Ceiling Tile	High	No	No	No	Good	Date coded to a time period where asbestos use was not widespread.																
Included	M	106	Captains' Room	Ceiling	Ceiling Space	Metal Q-Deck	High	No	No	No	Good	No spray-applied insulation.																
Included	M	106	Captains' Room	Windows	Caulking	White Caulking	High	No	Yes	No	Good	On window frame.	Bulk	V.S. A-014	15-Oct-17													
Included	M	106	Captains' Room	Mechanical	Duct Work	Duct Work	High	No	No	No	Good	Bare, uninsulated duct work.																
Included	M	106	Captains' Room	Mechanical	Duct Work	Fibreglass	High	No	No	No	Good	Fibreglass wrapped, no visible mastic																
Included	M	106	Captains' Room	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fibreglass and PVC fittings.																
Included	M	107	Inspector	Walls	Walls	Drywall	High	No	Yes	No	Good		Bulk	V.S. A-007, A-012, A-013, A-015, A-019	15-Oct-17													
Included	M	107	Inspector	Floor	Floor	Ceramic Tile	High	No	No	No	Good																	
Included	M	107	Inspector	Ceiling	Ceiling	2' x 4' Ceiling Tile	High	No	No	No	Good	Date coded to a time period where asbestos use was not widespread.																
Included	M	107	Inspector	Ceiling	Ceiling Space	Metal Q-Deck	High	No	No	No	Good	No spray-applied insulation.																
Included	M	107	Inspector	Mechanical	Duct Work	Duct Work	High	No	No	No	Good	Bare, uninsulated duct work.																
Included	M	107	Inspector	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fibreglass and PVC fittings.																
Included	M	108	Shower Room	Walls	Walls	Cinderblock	High	No	No	No	Good																	
Included	M	108	Shower Room	Floor	Floor	Ceramic Tile	High	No	No	No	Good																	
Included	M	108	Shower Room	Ceiling	Ceiling	Drywall	High	No	Yes	No	Good		Bulk	V.S. A-007, A-012, A-013, A-015, A-019	15-Oct-17													
Included	M	109	Washroom	Walls	Walls	Cinderblock	High	No	No	No	Good																	
Included	M	109	Washroom	Walls	Walls	Drywall	High	No	Yes	No	Good		Bulk	V.S. A-007, A-012, A-013, A-015, A-019	15-Oct-17													
Included	M	109	Washroom	Floor	Floor	Ceramic Tile	High	No	No	No	Good																	
Included	M	109	Washroom	Ceiling	Ceiling	Drywall	High	No	Yes	No	Good		Bulk	V.S. A-007, A-012, A-013, A-015, A-019	15-Oct-17													
Included	M	110	Male Dormitory	Walls	Walls	Cinderblock	High	No	No	No	Good																	
Included	M	110	Male Dormitory	Walls	Walls	Drywall	High	No	Yes	No	Good		Bulk	V.S. A-007, A-012, A-013, A-015, A-019	15-Oct-17													
Included	M	110	Male Dormitory	Floor	Floor	Carpet	High	No	No	No	Good																	
Included	M	110	Male Dormitory	Floor	Floor	Concrete	High	No	No	No	Good																	

Appendix C
ACM Inventory
Fire Station No. 2

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	110	Male Dormitory	Ceiling	Ceiling	2' x 4' Ceiling Tile	High	No	No	No	Good	Date coded to a time period where asbestos use was not widespread.																
Included	M	110	Male Dormitory	Ceiling	Ceiling Space	Metal Q-Deck	High	No	No	No	Good	No spray-applied insulation.																
Included	M	110	Male Dormitory	Windows	Caulking	White Caulking	High	No	Yes	No	Good	On window frame.	Bulk	V.S. A-014	15-Oct-17													
Included	M	110	Male Dormitory	Mechanical	Duct Work	Fibreglass	High	No	No	No	Good	Fibreglass wrapped, no visible mastic																
Included	M	110	Male Dormitory	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fibreglass and PVC fittings.																
Included	M	111	Shower Room	Walls	Walls	Drywall	High	No	Yes	No	Good		Bulk	V.S. A-007, A-012, A-013, A-015, A-019	15-Oct-17													
Included	M	111	Shower Room	Floor	Floor	Ceramic Tile	High	No	No	No	Good																	
Included	M	111	Shower Room	Ceiling	Ceiling	Drywall	High	No	Yes	No	Good		Bulk	V.S. A-007, A-012, A-013, A-015, A-019	15-Oct-17													
Included	M	112	Exercise Room	Walls	Walls	Cinderblock	High	No	No	No	Good																	
Included	M	112	Exercise Room	Walls	Walls	Drywall	High	No	Yes	No	Good		Bulk	V.S. A-007, A-012, A-013, A-015, A-019	15-Oct-17													
Included	M	112	Exercise Room	Floor	Floor	Rubber	High	No	No	No	Good																	
Included	M	112	Exercise Room	Floor	Floor	Vinyl Sheet Flooring	High	No	Yes	Yes	Good	Orange and red	Bulk	V.S. A-011	15-Oct-17	Chrysotile	Vinyl Sheet Flooring	20	Yes	No	N/A	Annually	5	Low	Manage in place.	420 sq. ft.	Photograph 3	
Included	M	112	Exercise Room	Ceiling	Ceiling	2' x 4' Ceiling Tile	High	No	No	No	Good	Date coded to a time period where asbestos use was not widespread.																
Included	M	112	Exercise Room	Ceiling	Ceiling Space	Metal Q-Deck	High	No	No	No	Good	No spray-applied insulation.																
Included	M	112	Exercise Room	Windows	Caulking	White Caulking	High	No	Yes	No	Good	On window frame.	Bulk	A-014	15-Oct-17													
Included	M	112	Exercise Room	Mechanical	Piping	Insulation	High	No	Yes	No	Good	Insulation on pipe fittings.	Bulk	V.S. A-001, A-002, A-009	15-Oct-17													
Included	M	112	Exercise Room	Mechanical	Duct Work	Duct Work	High	No	No	No	Good	Bare, uninsulated duct work.																
Included	M	112	Exercise Room	Mechanical	Duct Work	Fibreglass	High	No	No	No	Good	Fibreglass wrapped, no visible mastic																
Included	M	113	Dorm	Walls	Walls	Cinderblock	High	No	No	No	Good																	
Included	M	113	Dorm	Walls	Walls	Drywall	High	No	Yes	No	Good		Bulk	A-013	15-Oct-17													
Included	M	113	Dorm	Floor	Floor	Carpet	High	No	No	No	Good																	
Included	M	113	Dorm	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	M	113	Dorm	Ceiling	Ceiling	2' x 4' Ceiling Tile	High	No	No	No	Good	Date coded to a time period where asbestos use was not widespread.																
Included	M	113	Dorm	Ceiling	Ceiling Space	Metal Q-Deck	High	No	No	No	Good	No spray-applied insulation.																
Included	M	113	Dorm	Mechanical	Duct Work	Fibreglass	High	No	No	No	Good	Fibreglass wrapped, no visible mastic																
Included	M	114	Corridor	Walls	Walls	Cinderblock	High	No	No	No	Good																	
Included	M	114	Corridor	Walls	Walls	Drywall	High	No	Yes	No	Good		Bulk	A-015	15-Oct-17													
Included	M	114	Corridor	Floor	Floor	Ceramic Tile	High	No	No	No	Good																	
Included	M	114	Corridor	Ceiling	Ceiling	2' x 4' Ceiling Tile	High	No	No	No	Good	Date coded to a time period where asbestos use was not widespread.																
Included	M	114	Corridor	Ceiling	Ceiling Space	Metal Q-Deck	High	No	No	No	Good	No spray-applied insulation.																
Included	M	114	Corridor	Windows	Caulking	Grey Caulking	High	No	Yes	Yes	Good	On window panes.	Bulk	A-016	15-Oct-17	Chrysotile	Caulking	10	No	No	N/A	Annually	5	High	Manage in place.	15 ft.	Photograph 1	
Included	M	114	Corridor	Mechanical	Piping	Insulation	High	No	Yes	No	Good	Insulation on pipe fittings.	Bulk	V.S. A-001, A-002, A-009	15-Oct-17													
Included	M	115	Female Dorm Washroom	Walls	Walls	Drywall	High	No	Yes	No	Good		Bulk	V.S. A-007, A-012, A-013, A-015, A-019	15-Oct-17													
Included	M	115	Female Dorm Washroom	Floor	Floor	Vinyl Sheet Flooring	High	No	Yes	No	Good	Beige with Pink and Blue	Bulk	A-010	15-Oct-17													
Included	M	115	Female Dorm Washroom	Ceiling	Ceiling	2' x 4' Ceiling Tile	High	No	No	No	Good	Date coded to a time period where asbestos use was not widespread.																
Included	M	115	Female Dorm Washroom	Ceiling	Ceiling Space	Metal Q-Deck	High	No	No	No	Good	No spray-applied insulation.																
Included	M	115	Female Dorm Washroom	Mechanical	Duct Work	Fibreglass	High	No	No	No	Good	Fibreglass wrapped, no visible mastic																
Included	M	115	Female Dorm Washroom	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fibreglass and PVC fittings.																
Included	M	116	Female Dorm	Walls	Walls	Drywall	High	No	Yes	No	Good		Bulk	A-012	15-Oct-17													
Included	M	116	Female Dorm	Walls	Walls	Cinderblock	High	No	No	No	Good																	
Included	M	116	Female Dorm	Floor	Floor	Carpet	High	No	No	No	Good																	
Included	M	116	Female Dorm	Floor	Floor	Vinyl Sheet Flooring	High	No	Yes	Yes	Good	Orange and red	Bulk	A-011	15-Oct-17	Chrysotile	Vinyl Sheet Flooring	20	Yes	No	N/A	Annually	5	Low	Manage in place.	100 sq. ft.	Photograph 3	
Included	M	116	Female Dorm	Ceiling	Ceiling	2' x 4' Ceiling Tile	High	No	No	No	Good	Date coded to a time period where asbestos use was not widespread.																
Included	M	116	Female Dorm	Ceiling	Ceiling Space	Metal Q-Deck	High	No	No	No	Good	No spray-applied insulation. Potential vermiculite insulation and/or rat droppings present on ceiling tiles within the ceiling space.																
Included	M	116	Female Dorm	Mechanical	Piping	Insulation	High	No	Yes	No	Good	Insulation on pipe fittings.	Bulk	V.S. A-001, A-002, A-009	15-Oct-17													
Included	M	116	Female Dorm	Mechanical	Duct Work	Fibreglass	High	No	No	No	Good	Fibreglass wrapped, no visible mastic																
Included	M	117	Hose Tower	Walls	Walls	Cinderblock	High	No	No	No	Good																	
Included	M	117	Hose Tower	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	M	117	Hose Tower	Ceiling	Ceiling	Metal Q-Deck	High	No	No	No	Good	No spray-applied insulation.																
Included	M	117	Hose Tower	Mechanical	Piping	Insulation	High	No	Yes	No	Good	Insulation on pipe fittings.	Bulk	A-009	15-Oct-17													
Included	M	118	Apparatus Room	Walls	Walls	Cinderblock	High	No	No	No	Good																	
Included	M	118	Apparatus Room	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	M	118	Apparatus Room	Ceiling	Ceiling	Metal	High	No	No	No	Good																	
Included	M	118	Apparatus Room	Windows	Caulking	Black Caulking	High	No	Yes	Yes	Good	On window panes.	Bulk	A-017	15-Oct-17	Chrysotile	Caulking	4.3	No	No	N/A	Annually	5	High	Manage in place.	15 ft.	Photograph 2	
Included	M	118	Apparatus Room	Mechanical	Duct Work	Red Duct Mastic	High	No	Yes	No	Good	Uninsulated duct.	Bulk	A-008	15-Oct-17													
Included	M	118	Apparatus Room	Mechanical	Piping	Insulation	High	No	Yes	No	Good	Insulation on pipe fittings.	Bulk	V.S. A-001, A-002, A-009	15-Oct-17													
Included	M	119	Entry	Walls	Walls	Cinderblock	High	No	No	No	Good																	
Included	M	119	Entry	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	M	119	Entry	Ceiling	Ceiling	Metal	High	No	No	No	Good																	
Included	M	119	Entry	Mechanical	Piping	Insulation	High	No	Yes	No	Good	Insulation on pipe fittings.	Bulk	A-001	15-Oct-17													
Included	M	120	Storage Room	Walls	Walls	Cinderblock	High	No	No	No	Good																	
Included	M	120	Storage Room	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	M	120	Storage Room	Ceiling	Ceiling	Metal	High	No	No	No	Good																	

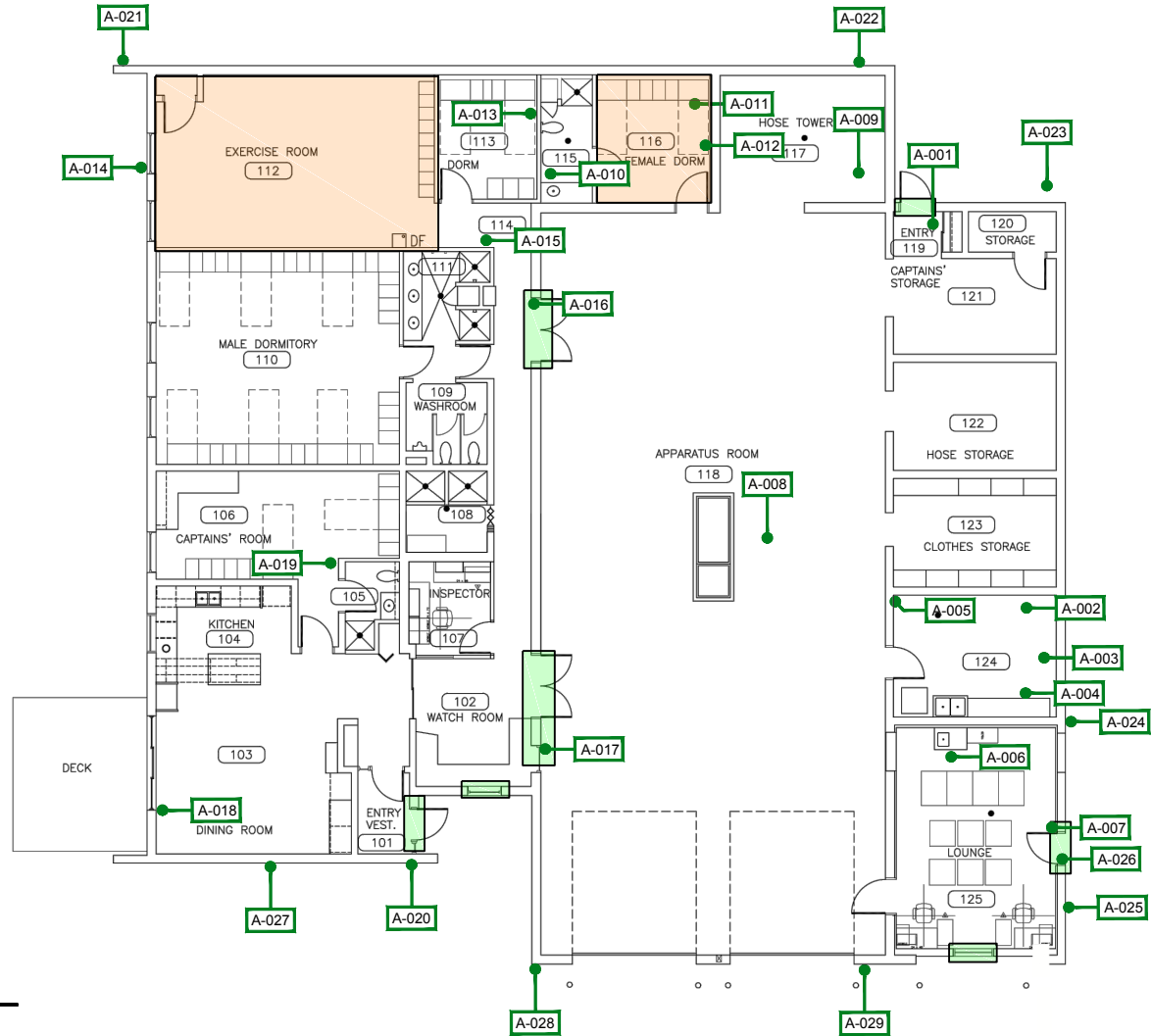
Appendix C
ACM Inventory
Fire Station No. 2

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	121	Captains' Storage	Walls	Walls	Cinderblock	High	No	No	No	Good																	
Included	M	121	Captains' Storage	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	M	121	Captains' Storage	Ceiling	Ceiling	Metal	High	No	No	No	Good																	
Included	M	121	Captains' Storage	Mechanical	Piping	Insulation	High	No	Yes	No	Good	Insulation on pipe fittings.	Bulk	V.S. A-001, A-002, A-009	15-Oct-17													
Included	M	121	Captains' Storage	Electrical	Electrical Panels and Components	Electrical Panels and Components	High	Yes	No	Potential	Good	Not sampled due to safety concerns.													Inspect and sample if scheduled for removal.			
Included	M	122	Hose Storage	Walls	Walls	Cinderblock	High	No	No	No	Good																	
Included	M	122	Hose Storage	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	M	122	Hose Storage	Ceiling	Ceiling	Metal	High	No	No	No	Good																	
Included	M	122	Hose Storage	Mechanical	Piping	Insulation	High	No	Yes	No	Good	Insulation on pipe fittings.	Bulk	V.S. A-001, A-002, A-009	15-Oct-17													
Included	M	123	Clothes Storage	Walls	Walls	Cinderblock	High	No	No	No	Good																	
Included	M	123	Clothes Storage	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	M	123	Clothes Storage	Ceiling	Ceiling	Metal	High	No	No	No	Good																	
Included	M	123	Clothes Storage	Mechanical	Piping	Insulation	High	No	Yes	No	Good	Insulation on pipe fittings.	Bulk	V.S. A-001, A-002, A-009	15-Oct-17													
Included	M	124	Mechanical Room	Walls	Walls	Cinderblock	High	No	No	No	Good																	
Included	M	124	Mechanical Room	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	M	124	Mechanical Room	Ceiling	Ceiling	Metal	High	No	No	No	Good																	
Included	M	124	Mechanical Room	Mechanical	Piping	Insulation	High	No	Yes	No	Good	Insulation on pipe fittings.	Bulk	A-002	15-Oct-17													
Included	M	124	Mechanical Room	Mechanical	Duct Work	Red Duct Mastic	High	No	Yes	No	Good	Uninsulated duct.	Bulk	A-003	15-Oct-17													
Included	M	124	Mechanical Room	Mechanical	Duct Work	Dark Grey Duct Mastic	High	No	Yes	No	Good	Uninsulated duct.	Bulk	V.S. A-003	15-Oct-17													
Included	M	124	Mechanical Room	Miscellaneous	Caulking	Grey Caulking	High	No	Yes	No	Good	Building caulking.	Bulk	A-005	15-Oct-17													
Included	M	124	Mechanical Room	Miscellaneous	Firestop	Grey Firestop Putty	High	No	Yes	No	Good		Bulk	A-004	15-Oct-17													
Included	M	124	Mechanical Room	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fibreglass and PVC fittings.																
Included	M	125	Lounge	Walls	Walls	Cinderblock	High	No	No	No	Good																	
Included	M	125	Lounge	Walls	Walls	Drywall	High	No	Yes	No	Good		Bulk	A-007	15-Oct-17													
Included	M	125	Lounge	Floor	Floor	Carpet	High	No	No	No	Good																	
Included	M	125	Lounge	Floor	Floor	Concrete	High	No	No	No	Good																	
Included	M	125	Lounge	Ceiling	Ceiling	2' x 4' Ceiling Tile	High	No	No	No	Good	Date coded to a time period where asbestos use was not widespread.																
Included	M	125	Lounge	Ceiling	Ceiling Space	Metal	High	No	No	No	Good																	
Included	M	125	Lounge	Mechanical	Duct Work	Duct Work	High	No	No	No	Good	Bare, uninsulated duct work.																
Included	M	125	Lounge	Mechanical	Piping	Insulation	High	No	Yes	No	Good	Insulation on pipe fittings.	Bulk	V.S. A-001, A-002, A-009	15-Oct-17													
Included	M	125	Lounge	Mechanical	Piping	Metal Pipes	High	No	No	No	Good	Bare or insulated with fibreglass and PVC fittings.																
Included	M	125	Lounge	Miscellaneous	Sink	White Undercoat	High	No	Yes	No	Good		Bulk	A-006	15-Oct-17													
Included	E	Exterior	Exterior	Walls	Walls	Brick	High	No	Yes	No	Good	Brick mortar sampled.	Bulk	A-020, A-021, A-022, A-023, A-024	15-Oct-17													
Included	E	Exterior	Exterior	Windows	Caulking	Black Caulking	High	No	Yes	Yes	Good	On window panes.	Bulk	A-026	15-Oct-17	Chrysotile	Caulking	5.7	No	No	N/A	Annually	5	High	Manage in place.	100 ft.	Photograph 4	
Included	E	Exterior	Exterior	Miscellaneous	Caulking	Silver Caulking	High	No	Yes	No	Good	On vent.	Bulk	A-025	15-Oct-17													
Included	E	Exterior	Exterior	Miscellaneous	Caulking	Grey Caulking	High	No	Yes	No	Good	Building caulking.	Bulk	A-027	15-Oct-17													
Included	E	Exterior	Exterior	Miscellaneous	Caulking	Light Brown Caulking	High	No	Yes	No	Good	Building caulking.	Bulk	A-028	15-Oct-17													
Included	E	Exterior	Exterior	Miscellaneous	Caulking	White Caulking	High	No	Yes	No	Good	Building caulking.	Bulk	A-029	15-Oct-17													
Excluded	E	Exterior	Roof	Exterior Roof	Exterior Roof							Not assessed due to scope of work.																



APPENDIX D

Floor Plan



- LEGEND**
- # ASBESTOS SAMPLE LOCATION
 - ASBESTOS - CONTAINING VINYL SHEET FLOORING
 - 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: 01/06/2016.

CLIENT
 CITY OF SASKATOON

CONSULTANT



YYYY-MM-DD 2017-12-04
 DESIGNED KH
 PREPARED VI
 REVIEWED KH
 APPROVED AG

PROJECT
 ASBESTOS ASSESSMENT
 FIRE STATION NO. 2
 3111 DIEFENBAKER DRIVE

TITLE
FIRE STATION NO. 2

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

SCHEMATIC ONLY, NOT TO SCALE

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

26 mm

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