



**City of Saskatoon
Staff Development Center
Asbestos Survey Report**



December 2015

**Prepared For: City of Saskatoon – Infrastructure Services – Facilities Branch
Staff Development Center
116 Avenue W South, Saskatoon SK
Attn: Brent Anderson**

**Prepared By: Bersch & Associates Ltd.
Project No. : B67SRC26**

1.0 EXECUTIVE SUMMARY

The asbestos survey of the Staff Development Center located at 116 Avenue W South in Saskatoon, SK. entailed the inspection of all accessible suspect asbestos-containing materials (ACM) located throughout the facility including the roof membrane. The roof membrane was included as a result of the upcoming roof upgrade project. Materials inspected included: roof membrane, caulking, roof felt, ceiling tile, brick mortar, mechanical insulation, drywall mud compound and sheet floor covering.

Bulk sample analysis results do not indicate the presence of asbestos within the Staff Development Center. Asbestos containing materials **were not** detected in the building. Please refer to **Appendix I for Bulk Sample Analysis** results. *Prior to any major renovation/demolition activity, a destructive investigation is recommended to identify any inaccessible ACM that is physically concealed or isolated in areas such as enclosed wall/ceiling/floor cavities and pipe chases.*

2.0 INTRODUCTION

Bersch & Associates Ltd. was retained by the City of Saskatoon to conduct an Asbestos Survey and Hazard Assessment of the Staff Development Center located in Saskatoon, SK. The survey entailed the inspection of all accessible areas of the facility; including ceiling spaces and pipe chases. The purpose of the survey was to locate, identify and assess the condition of all Asbestos Containing Materials (ACM) located throughout the facility. This report gives a detailed account of the inspection results and our firm's recommendations on control options to be implemented to bring the facility in compliance with the Province of Saskatchewan Occupational Health and Safety Act and Regulations. Brad Berschinsky of Bersch & Associates Ltd. completed the survey in March 2015. A review of this report shall be conducted with all trades that are entering the facilities to perform maintenance or renovation activity.

3.0 METHODOLOGY

Bersch & Associates Ltd. conducted the survey of the Staff Development Center located in Saskatoon, SK. in March of 2015. The primary documents for guidance and criteria in this survey were the Province of Saskatchewan "Occupational Health and Safety Act and Regulations, 1996", Province of Saskatchewan "Managing Asbestos", and the U.S. Environmental Protection Agency "Guidance for Controlling Asbestos Containing Materials in Buildings". The USEPA document identifies factors associated with the "condition" and the "potential for disturbance or erosion" of asbestos containing materials (ACM). These factors help to determine potential for exposure to ACM and were used to make a qualitative evaluation of the material. It should be noted that the recommendation of "Management" Asbestos Abatement Action is based upon the premise that renovations are not scheduled in that area that will require disturbing or violating the asbestos containing material. In the event that renovations are scheduled further testing may be necessary.

In total eleven (11) bulk samples of suspect asbestos-containing materials were collected within the Staff Development Center. Refer to **Appendix I** for a copy of the Bulk Sample Analysis Report. All bulk samples collected were analyzed by Bersch & Associates Ltd. laboratory in accordance with the current USEPA 600/R-93/116 Method for the analysis of asbestos in building materials using polarized light microscopy and dispersion staining techniques. The detection limit of this method is listed as <1% by volume.

4.0 RECOMMENDATIONS

There are no recommendations at this time as asbestos was not detected throughout the survey of the Staff Development Center. ***Prior to any major renovation/demolition activity, a destructive investigation is recommended to identify any inaccessible ACM that is physically concealed or isolated in areas such as enclosed wall/ceiling/floor cavities and pipe chase.***

5.0 ASBESTOS ABATEMENT DISCUSSION

Asbestos is a known carcinogen and is listed in the Province of Saskatchewan under the Occupational Health and Safety Appendix, Part V as a Hazardous Chemical Substance and any release of asbestos fibres into the atmosphere creates a potential health hazard. Although the mechanism and epidemiology of asbestos carcinogenesis is not yet well defined, accumulating evidence suggests the significance of exposure at even very low fibre concentrations and hence human exposure should be kept to a minimum. It should be noted however that asbestos is a natural mineral and a measurable background concentration can be detected in any location sampled (inside buildings, outside buildings, urban, rural, etc.). The recommendations of the report are therefore intended to keep the potential exposure to an absolute minimum with the knowledge that a zero exposure is not possible.

Asbestos containing materials have been used in a wide variety of applications. Of particular concern, is the group of so called friable products. A friable product is one which can be crumbled or reduced to powder or smaller fragments by hand pressure. Publications from the U.S.E.P.A. as early as 1977 have indicated the potential hazard of asbestos exposure in buildings containing these friable products. The two main uses of friable asbestos products are as spray insulation (thermal, acoustic or fireproofing) on deck and/or beams or as thermal insulation on piping or mechanical equipment. A large amount of non-friable asbestos-containing materials have also been used in building construction such as asbestos cement board and asbestos containing vinyl flooring.

The mere presence of a friable asbestos containing material does not imply that there is an actual presence of elevated airborne fibre. As numerous studies have indicated, elevated asbestos fibre levels are generally found when settled dust or the actual asbestos containing material itself is disturbed by maintenance, renovation, inadvertent contact or vibration. The factors considered in the Environmental Protection Agency (USEPA) exposure assessment (condition of material, water damage, activity, movement, exposed surface area, accessibility, friability and presence in an air stream) often give some indication of the likelihood of fibre release but are not in any way definitive in determining whether a hazard exists or not. That is, even if the most friable product

exists in a building, elevated fibre levels will not likely occur unless there is some disturbance by physical contact, vibration or an air stream.

There are four possible approaches to control exposure to airborne asbestos once a friable material is identified in a building. These methods briefly are as follows:

- A) Removal** - Asbestos material is removed and disposed of by burial and replaced by non-asbestos materials.
- B) Encapsulation** - Asbestos material is coated with a bridging or penetrating sealant.
- C) Enclosure** - Asbestos containing materials are separated from the building environment by barriers such as suspended ceilings or cladding materials.
- D) Deferred Action or Management and Custodial Control** - The Province of Saskatchewan Human Resources, Labor and Employment Branch under the Occupational health and Safety Regulations publish a document outlining “The Management of Asbestos”. In the guide for compliance, an action plan is outlined for management of the asbestos materials identified and in summary is:
 - 1. Identification, which has been accomplished by this report.
 - 2. Development of Written Handling Procedures for maintenance personnel or often arrangements are made for a qualified contractor to conduct the necessary removal or spot maintenance prior to the regular staff conducting maintenance.
 - 3. Asbestos Abatement Awareness and Process Training if the regular maintenance personnel are required to conduct asbestos related activities.
 - 4. Inspection on regular basis is conducted to determine the ongoing condition of the material. Sask. Occupational Health & Safety Regulations require an “annual” inspection of all “friable” asbestos materials by a competent person.

In the event renovations or maintenance is performed within areas containing asbestos materials, written procedures must be developed to conduct the activity or prior removal if the situation warrants.

6.0 REFERENCES

- .1 Province of Saskatchewan "The Occupational Health and Safety Act and The Occupational Health and Safety Regulations" Office Consolidation, January 1996.
- .2 Province of Saskatchewan Human Resources, Labor, and Employment "The Management of Asbestos" January, 1991.
- .3 USEPA, 1985. U.S. Environmental Protection Agency, "Guidance for Controlling Asbestos-Containing Materials in Buildings". Washington, DC: Office of Toxic Substances, USEPA.
- .4 Midwest Centre for Occupational Health & Safety St. Paul's, Minnesota – Asbestos Training For Inspectors & Management Planners
- .5 McCrone Research Institute Course Hayward California "Asbestos Identification"
- .6 Environment Management and Protection Act, Saskatchewan Environment, October 2002
- .7 Hazardous Substances and waste Dangerous Goods Regulations, Saskatchewan Environment, April 1989

APPENDIX I

BULK SAMPLE ANALYSIS REPORT

BERSCH & ASSOCIATES LTD.

March 31, 2015

City Of Saskatoon
Infrastructure Services Department
3130 Laurier Drive
Saskatoon, Sk.
S7L 5J7

ATTENTION: Brent Anderson

SUBJECT: Bulk Sample Analysis Report

Please find attached our laboratory's results for the bulk material samples collected from the Staff Development Center located at 116 Avenue W South in Saskatoon, SK. The samples were analyzed in our laboratory for the identification of asbestos.

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

This test report relates only to the materials sent for examination and any use or extension of the information by the client of these results is the responsibility of the client. If any questions arise on the results of the attached information please contact me at 306 222 7477. Thank you for this opportunity of service!

Sincerely,

Brad Berschiminsky
Bersch & Associates Ltd.
File: B67BLC26

Bersch & Associates Ltd.

B67BAC26

Box 3568

Humboldt, Sask. S0K 2A0

BULK SAMPLE ANALYSIS REPORT**PROJECT NO. B67.15****CLIENT: CITY OF SASKATOON - INFRASTRUCTURE SERVICES – FACILITIES BRANCH****STAFF DEVELOPMENT CENTER****CONTACT: BRENT ANDERSON****LOCATION: 116 AVENUE W SOUTH, SASKATOON, SK.**

NO.	DATE	SAMPLE INFORMATION	ASBESTOS	%	ANALYST
1	26-Mar-15	Rooftop Lower Level - Roof Membrane - 12' North Of The Hose Tower Doorway Rooftop Access. Sample Consists Of Tar, Felt And Styrofoam.	No Asbestos Detected		WB
2	26-Mar-15	Rooftop 2nd Level - Roof Membrane - West Side Adjacent The Hose Tower Downspout. Sample Consists Of Tar, Felt And Styrofoam.	No Asbestos Detected		WB
3	26-Mar-15	Rooftop Lower Level - Mastic On Natural Gas Pipeline Roof Penetration Adjacent Trane Unit.	No Asbestos Detected		WB
4	26-Mar-15	Rooftop Lower Level - Grey Caulking On Lower Flashing Around The Hose Tower.	No Asbestos Detected		WB
5	26-Mar-15	Hose Tower Rooftop Access Hatch - Roof Felt On The Edge Of The Access Door.	No Asbestos Detected		WB
6	26-Mar-15	File Storage - Southeast Corner Of The Building - 2' X 4' White Ceiling Tile With A Pinhole Pattern.	No Asbestos Detected		WB

Bersch & Associates Ltd.

B67BAC26

Box 3568

Humboldt, Sask. S0K 2A0

BULK SAMPLE ANALYSIS REPORT

PROJECT NO. B67.15

CLIENT: CITY OF SASKATOON - INFRASTRUCTURE SERVICES – FACILITIES BRANCH

STAFF DEVELOPMENT CENTER

CONTACT: BRENT ANDERSON

LOCATION: 116 AVENUE W SOUTH, SASKATOON, SK.

NO.	DATE	SAMPLE INFORMATION	ASBESTOS	%	ANALYST
7	26-Mar-15	Center Room - Brick Mortar In The Cavity Below The Drinking Fountain.	No Asbestos Detected		WB
8	26-Mar-15	Board Room - Northeast Corner Of The Building - Insulation On The Domestic Water Pipeline In The Ceiling Space.	No Asbestos Detected		WB
9	26-Mar-15	Board Room - Northeast Corner Of The Building - Drywall Mud Compound Above The Suspended Ceiling In The Southeast Corner Of The Room.	No Asbestos Detected		WB
10	26-Mar-15	Main Entrance - Sheet Floor Covering, Multi Color Flake Pattern.	No Asbestos Detected		WB
11	26-Mar-15	2nd Office On Left From Main Entrance - Brick Mortar Above Suspended Ceiling Along The Exterior Wall.	No Asbestos Detected		WB



FINAL
**Limited Asbestos
Building Materials
Assessment**

City of Saskatoon Staff
Development Centre, Training
Room Drop, 116 Avenue W
South, Saskatoon,
Saskatchewan

Prepared for:

City of Saskatoon
1101 Avenue P North
Saskatoon, Saskatchewan

Attention: Les Severson

April 4, 2017

PWL File: 7141AO-003r01

Issued to: City of Saskatoon
Contact: Les Severson

Issued on: April 4, 2017
PWL File: 7141AO-003r01
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Limited Asbestos Building Materials Assessment

City of Saskatoon Staff Development Centre, Training Room Drop, 116 Avenue W South,
Saskatoon, Saskatchewan
City of Saskatoon

April 4, 2017

PWL File: 7141AO-003r01

FINAL

DISTRIBUTION

cc: Hazel Fernandez Indoor Air Quality Manager, Hazel.Fernandez@saskatoon.ca
Asbestos Program Manager,
Facilities & Fleet Division

EXECUTIVE SUMMARY

City of Saskatoon (Client) retained Pinchin West Ltd. (PWL) to conduct limited asbestos-containing building materials assessment for the "Training Room Drop" at the City of Saskatoon Staff Development Center, 116 Avenue W South, Saskatoon, Saskatchewan. PWL performed the assessment on March 30, 2017.

The objective of the assessment was to identify specified hazardous building materials in preparation for building renovation. The results of this assessment are intended for use with a properly developed scope of work and performance specification.

The assessed area was limited to the training room. The area to be renovated including drywall walls, acoustic ceiling tiles, and above the ceiling.

SUMMARY OF FINDINGS

Asbestos: Asbestos-containing materials were not identified in the assessed areas.

SUMMARY OF RECOMMENDATIONS

Provide this report and the detailed plans to the contractor prior to bidding or commencing work.

This Executive Summary is subject to the same standard limitations as contained in the report and must be read in conjunction with the entire report.

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1.0 INTRODUCTION AND SCOPE

City of Saskatoon (Client) retained Pinchin West Ltd. (PWL) to conduct a hazardous building materials assessment of City of Saskatoon Staff Development Center "Training Room Drop", located at City of Saskatoon Staff Development Centre, Training Room Drop, 116 Avenue W South, Saskatoon, Saskatchewan.

Paul Farago, B.A.Sc., P.Eng., performed the assessment on March 30, 2017. The surveyor was accompanied by Les Severson from the City of Saskatoon during the assessment. The building was occupied at the time of the assessment.

The objective of the assessment was to identify specified asbestos-containing building materials in preparation for building renovation. This assessment is intended to be used for pre-construction purposes only, and may not provide sufficient detail for long term management of hazardous materials as required by Health and Safety regulations. The results of this assessment are intended for use with a properly developed scope of work and performance specification.

1.1 Scope of Assessment

The assessment was performed to establish the location and type of asbestos building materials incorporated in the structure(s) and its finishes. The assessed area was limited to the training room located at the northeast corner of the building. The extent of the assessed area was defined by the Client and is limited to the training room shown in the northeast corner of the building on the appended drawing.

2.0 BACKGROUND INFORMATION

Building Description Item	Details
Building Use	Staff Development and training facility
Floor Level Assessed	Main floor area
Total Area of Assessed area of Building (Square Feet)	900 square foot training room in northeast corner of the building. Drywall walls, acoustic ceiling tiles, and above ceiling space
Year of Construction/Significant Additions/Renovations (area assessed)	Circa 1970's
Structure	Structural steel, concrete, masonry brick
Exterior Cladding	Brick
HVAC	Ducting to diffusers in training room
Roof	Steel decking in above ceiling space
Flooring	Concrete
Interior Walls	Drywall, masonry brick behind exterior wall drywall
Ceilings	Acoustic ceiling tiles

2.1 Existing Reports

PWL was provided, and instructed to rely upon, the following existing reports:

- City of Saskatoon Staff Development Center Asbestos Survey Report, Bersch & Associates Ltd., Dated December 2015.

3.0 FINDINGS

3.1 Asbestos

3.1.1 Suspect Building Materials Not Found

The following types of building materials may historically contain asbestos but were not observed in the assessed area of the building and are not discussed in the report findings:

- Spray-applied fireproofing or thermal insulation
- Vermiculite

- Texture finishes (acoustic/decorative)
- Duct insulation
- Mechanical equipment insulation

3.1.1.1 Pipe Insulation

Pipes are insulated with fibreglass, or other non-asbestos insulation such as mineral fibre or elastomeric foam insulation.



Photo 1 - Non-Asbestos containing fiberglass piping insulation on piping above acoustic ceiling tiles in boardroom



Photo 2 - Non-Asbestos containing fiberglass piping insulation on pipe elbows above acoustic ceiling tiles in boardroom.

3.1.1.2 Duct Insulation

Ducts are not insulated.



Photo 3: Un-insulated metal duct, structural steel roof truss, and metal roof decking above acoustic ceiling tiles in training room.

3.1.2 Acoustic Ceiling Tiles

One distinct type of acoustic ceiling tile is present in the assessed area, as follows:

Size, Type, Pattern, Photo #	Locations (Quantity in Square Feet)	Sample Number or Date Code	Asbestos Type
24"x48", lay-in, fissure and pinhole, Photos #4 and #5	Training Room 900 ft ²	Date Stamp 06/05/92	Non-Asbestos Containing

All ceiling tiles are presumed to be non-asbestos based on the date of manufacture determined from the date stamp applied to the top of the tiles or the age of the materials determined from the age of the building or the renovation. The tiles were manufactured after asbestos stopped being used in acoustic ceiling tiles.

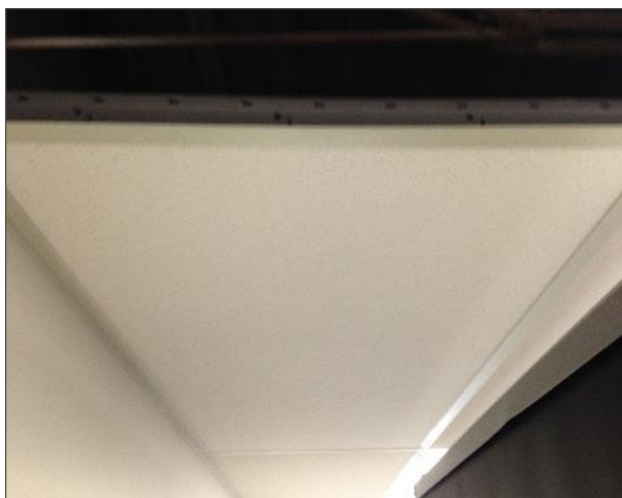


Photo 4: Acoustic Ceiling Tiles, 24"x48" Pinhole and Fissure, Date Stamp 06/05/92, Training Room

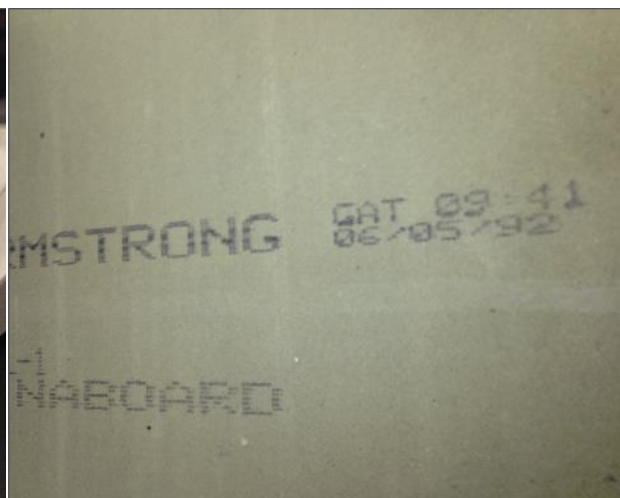


Photo 5: Acoustic Ceiling Tiles, 24"x48" Pinhole and Fissure, Date Stamp 06/05/92, Training Room

3.1.3 Drywall Joint Compound

Drywall (gypsum board) and drywall joint compound is present as a wall finish in the Training Room. Based on the results of the testing (samples S0001a-c), the drywall joint compound in the Training Room does not contain asbestos.



Photo 6 - Drywall Joint Compound on walls (Sample S0001A-C) Boardroom



Photo 7 - Drywall Joint Compound on walls (Sample S0001A-C) Boardroom

3.1.4 Other Building Materials

Debris was observed on the top of the acoustic ceiling tiles below piping. The debris was suspected to be remaining from previous pipe insulation removal. The debris was sampled in (samples S0002a-c) and found not to contain asbestos.



Photo 8 - Debris on acoustic ceiling tiles (samples S0002a-c), training room.



Photo 8 - Debris on acoustic ceiling tiles (samples S0002a-c), training room.

3.1.5 *Presumed Asbestos Materials*

A number of materials which might contain asbestos were not sampled during the assessment due to limitations in scope and methodology. Where present, these materials must be presumed to be an asbestos material and are best sampled during project planning and preparation of contract documents for their removal. Materials presumed to contain asbestos are listed in the Methodology.

4.0 RECOMMENDATIONS

Provide this report and the detailed plans to the contractor prior to bidding or commencing work.

5.0 LIMITATIONS

Specific limitations related to the legal and financial and limitations to the scope of the current work are outlined in our proposal, the attached Methodology and the Authorization to Proceed which accompanied the proposal.

The work performed by PWL was conducted in accordance with generally accepted engineering or scientific practices current in this geographical area at the time the work was performed. No warranty is either expressed or implied by furnishing written reports or findings. The Client acknowledges that subsurface and concealed conditions may vary from those encountered or inspected. PWL can only comment on the environmental conditions observed on the date(s) the survey is performed. The work is limited to those materials or areas of concern identified by the Client or outlined in our proposal. Other areas of concern may exist but were not investigated within the scope of this assignment.

PWL makes no other representations whatsoever, including those concerning the legal significance of its findings or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issue, regulatory statutes are subject to interpretation and these interpretations may change over time. PWL accepts no responsibility for consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The liability of PWL or our officers, directors, shareholders or staff will be limited to the lesser of the fees paid or actual damages incurred by the Client. PWL will not be responsible for any consequential or indirect damages. PWL will only be liable for damages resulting from the negligence of PWL. PWL will not be liable for any losses or damage if the Client has failed, within a period of two years following the date upon which the claim is discovered (Claim Period), to commence legal proceedings against PWL to recover such losses or damage unless the laws of the jurisdiction which governs the Claim Period which is applicable to such claim provides that the applicable Claim Period is greater than two years and cannot be abridged by the contract between the Client and PWL, in which case the Claim Period shall be



deemed to be extended by the shortest additional period which results in this provision being legally enforceable.

Information provided by PWL is intended for Client use only. PWL will not provide results or information to any party unless disclosure by PWL is required by law. Any use by a third party of reports or documents authored by PWL or any reliance by a third party on or decisions made by a third party based on the findings described in said documents, is the sole responsibility of such third parties. PWL accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted. No other warranties are implied or expressed.

6.0 REFERENCES

The following legislation and documents were referenced in completing the assessment and this report:

1. Occupational Health and Safety Regulations, Saskatchewan Labour, (O-1.1 Reg 1).
2. The Hazardous Substances and Waste Dangerous Goods Regulations, Environmental Management and Protection Act, Saskatchewan Environment, 1989.
3. Halocarbon Control Regulations, Saskatchewan Environment, 2005.
4. PCB Regulations, SOR/2008-273, Canadian Environmental Protection Act.
5. Surface Coating Materials Regulations, SOR/2005-109, Hazardous Products Act.
6. Transportation of Dangerous Goods Regulations SOR/2008-34, Transportation of Dangerous Goods Act.
7. Mould Guidelines for the Canadian Construction Industry, Standard Construction Document CCA 82 – 2004, Canadian Construction Association.
8. Saskatchewan Asbestos Abatement Manual, Guidelines for Asbestos Processes in Building Demolition and Renovation, 2016.

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Template: Master Report for Hazardous Materials Assessment Report (Pre-Construction), Haz, February 1, 2016

APPENDIX I
Drawings

6

7/4/20-003



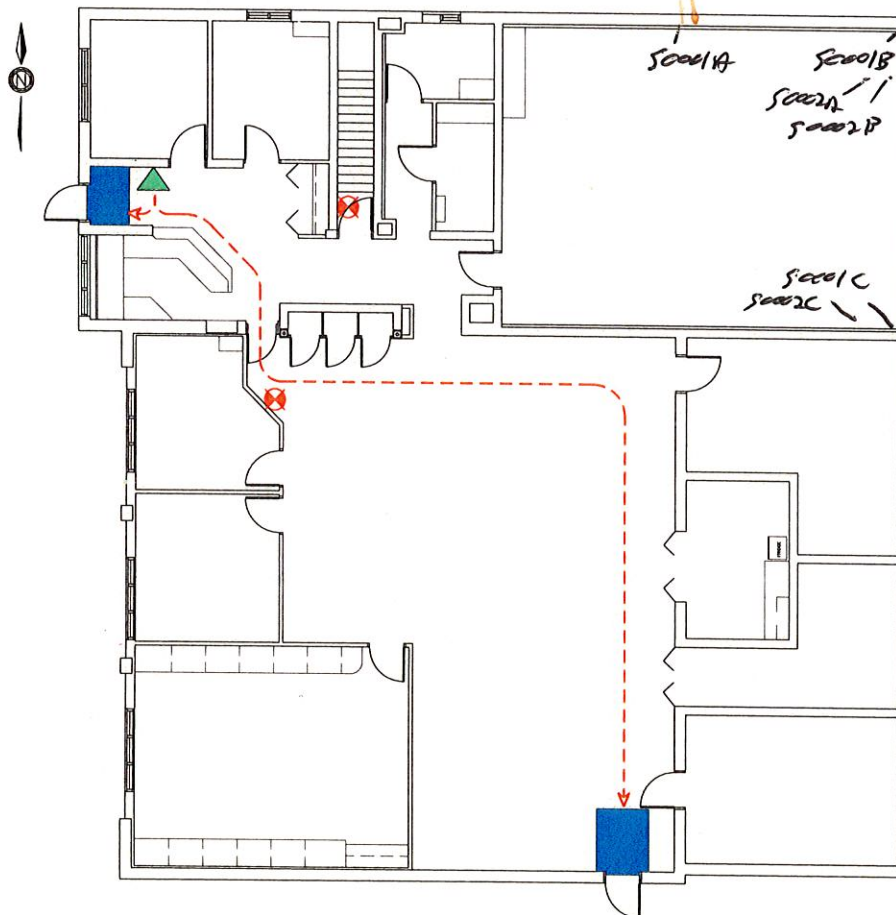
STAFF DEVELOPMENT CENTRE EMERGENCY EVACUATION PLAN

OFFICE STAFF – IN CASE OF FIRE

1. Proceed to the nearest exit.
2. Close doors behind you.
3. Activate the red fire alarm pull station as you leave.
4. Call 9-1-1.
5. If safe to do so grab a portable fire extinguisher; control and extinguish the fire.
6. Proceed to the designated place of assembly (Maintenance shop).
7. Do not return to the building until it is safe to do so.

LEGEND

-  Exit
-  Fire Extinguisher
-  Fire Alarm Pull Station
-  You are here
-  Means of Egress



MAIN FLOOR

SC001A-C
DRYING
JOINT
COMPONENTS

SC002A-C
DEBRIS
"PARFUM
CLEMENT?"
ON
ACACUS
CBLIVE
THES

SC001A

SC001B

SC001A

SC001B

SC001C
SC001D

APPENDIX II
Asbestos Analytical Certificates



Bulk Asbestos Analysis

By Polarized Light Microscopy
EPA Method: 600/R-93/116 and 600/M4-82-020



Customer: Pinchin West Ltd.
210 Cardinal Crescent
Saskatoon, SK S7L 6H8

Attn: Paul Farago

Lab Order ID: 1706654

Analysis ID: 1706654_PLM

Date Received: 3/31/2017

Date Reported: 3/31/2017

Project: City of Saskatoon "Staff Development Centre" 116 Ave W South, Saskatoon, SK"

Sample ID	Description	Asbestos	Fibrous Components	Non-Fibrous Components	Attributes
Lab Sample ID	Lab Notes				Treatment
S0001A	Drywall Joint Compound, Boardroom, North Wall Centre	None Detected		100% Other	White Non Fibrous Homogeneous
1706654PLM_1					Crushed
S0001A	Drywall Joint Compound, Boardroom, Northeast corner	None Detected		100% Other	White Non Fibrous Homogeneous
1706654PLM_2	S0001B				Crushed
S0001A	Drywall Joint Compound, Boardroom, South East corner	None Detected		100% Other	White Non Fibrous Homogeneous
1706654PLM_3	S0001C				Crushed
S0002A	Debris on acoustic ceiling tiles, - Parging Cement? Boardroom NE Corner	None Detected		100% Other	Gray, Black Non Fibrous Heterogeneous
1706654PLM_4					Crushed
S0002B	Debris on acoustic ceiling tiles, - Parging Cement? Boardroom NE Corner	None Detected		100% Other	Gray, Black Non Fibrous Heterogeneous
1706654PLM_5					Crushed
S0002C	Debris on acoustic ceiling tiles, - Parging Cement? Boardroom SE Corner	None Detected		100% Other	Gray, Black Non Fibrous Heterogeneous
1706654PLM_6					Crushed

Disclaimer: Due to the nature of the EPA 600 method, asbestos may not be detected in samples containing low levels of asbestos. We strongly recommend that analysis of floor tiles, vermiculite, and/or heterogeneous soil samples be conducted by TEM for confirmation of "None Detected" by PLM. This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAL. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. government. Analytical uncertainty available upon request. Scientific Analytical Institute participates in the NVLAP Proficiency Testing program. Unless otherwise noted blank sample correction was not performed. Estimated MDL is 0.1%.

Charmel Dozier (6)

Analyst

Approved Signatory

APPENDIX III
Methodology

1.0 GENERAL

PWL conducts a room-by-room survey (rooms, corridors, service areas, exterior, etc.) to identify the asbestos building materials defined by the scope of the work. All work is conducted in accordance with our own internal Standard Operating Procedures.

Information regarding the location and condition of asbestos building materials encountered and visually estimated quantities are recorded. The locations of any samples collected are recorded on small-scale plans.

As-built drawings and previous reports are referenced where provided.

1.1 Scope Limitations

The assessment excludes the following:

- Articles belonging to the owner, tenant or occupant (e.g. stored items, furniture, appliances, etc.);
- Underground materials or equipment (e.g. vessels, drums, underground storage tanks, pipes, etc.);
- Building envelope, structural components, inaccessible or concealed materials or other items where sampling may cause consequential damage to the property.
- Energized systems (e.g. internal boiler components, elevators, mechanical or electrical components);
- Controlled products (e.g. stored chemicals, operational or process-related substances); and
- Materials not typically associated with construction (e.g. settled dust, spills, residual contamination from prior spills, etc.).

The assessment includes limited demolition of wall and ceiling finishes (drywall or plaster) to view concealed conditions at representative areas as permitted by the current building use. Limited destructive testing of flooring is conducted where possible (under carpets or multiple layers of flooring). Demolition of masonry walls (chases, shafts etc.), structural items or exterior building finishes is not conducted. PWL conducts limited demolition of masonry block walls (core holes) to investigate for loose fill insulation.

1.2 Detailed Methodology

PWL conducts an inspection for the presence of friable and non-friable asbestos-containing materials (ACM). A friable material is a material that when dry can be crumbled, pulverized or powdered by hand pressure.

A separate set of samples is collected of each type of homogenous material suspected to contain asbestos. A homogenous material is defined by the US EPA as material that is uniform in texture and appearance, was installed at one time, and is unlikely to consist of more than one type or formulation of material. The homogeneous materials are determined by visual examination and available information on the phases of construction and prior renovations.

PWL collects samples at a rate that is in compliance with the requirements of local regulations and guidelines.

The sampling strategy is also based on known ban dates and phase out dates of the use of asbestos; sampling of certain building materials is not conducted after specific construction dates. In addition, to be conservative, several years past these dates are added to account for some uncertainty in the exact start/finish date of construction and associated usage of ACM.

In some cases, manufactured products such as asbestos cement pipe are visually identified without sample confirmation.

Drywall joint compound is sampled at exterior walls, columns or other locations that are unlikely to have been renovated in an attempt to determine the presence of asbestos in the original drywall compound. Delineation of asbestos-containing drywall compound from newer, non-asbestos drywall compound is not conducted.

Flooring mastic or adhesive is sampled and analyzed if present on the underside of flooring samples (vinyl floor tile and vinyl sheet flooring).

If present, the following materials are presumed to be asbestos-containing and are best sampled immediately prior to commencing renovation/disturbance:

- electrical components or wiring within control centers, breakers, motors or lights, insulation on wiring

PWL submits the bulk samples to a NVLAP accredited laboratory for analysis. The analysis is performed in accordance with Test Method EPA/600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials, July 1993.

In Saskatchewan an ACM is defined as materials containing >1% asbestos by weight for non-friable materials, or >0.5% for friable materials or any amount if vermiculite.

The asbestos analysis is completed using a stop positive approach. Only one result meeting the above regulated criteria is required to determine that a material is asbestos-containing, but all samples must be analyzed to conclusively determine that a material is non-asbestos. The laboratory stops analyzing samples from a homogeneous material once a result equal to or greater than the regulated criteria is

detected in any of the samples of that material. All samples of a homogeneous material are analyzed if no asbestos is detected. In some cases, all samples are analyzed in the sample set regardless of result.

Where building materials are described in the report as non-asbestos, this means that either no asbestos was detected by the analytical method utilized in any of the multiple samples or, if detected, it is below the lower limit of an asbestos-containing material in the applicable regulation.

Asbestos materials are evaluated in order to make recommendations regarding remedial work. The priority for remedial action is based on several factors:

- Friability (friable or non-friable).
- Condition (good, fair, poor, debris).
- Accessibility (ranking from accessible to all building users to inaccessible).
- Visibility (whether the material is obscured by other building components).
- Air movement or air erosion (present, not present).
- Efficiency of the work (for example, if damaged ACM is being removed in an area, it may be most practical to remove all ACM in the area even if it is in good condition).

Master Template: Methodology Document for Asbestos Assessment, HAZ, October 18, 2016