Bersch & Associates Ltd.

CITY OF SASKATOON – BOWERMAN HOUSE
ASBESTOS SURVEY REPORT

APRIL 2013

Prepared For: **City of Saskatoon – Infrastructure Services Department**
1101 Avenue P North, Saskatoon SK, Canada S7L 7K6
Attn: Brent Anderson

Prepared By: **Bersch & Associates Ltd.**
Project No. : **B67SRD29B**

1.0 EXECUTIVE SUMMARY

The asbestos audit of the Bowerman House located at 1328 Avenue K South in Saskatoon, SK. entailed the inspection of all accessible suspect asbestos-containing materials (ACM). Materials inspected included pipeline insulation, sheet floor coverings, vinyl floor tile and mud compound on pipeline fittings. Bulk sample analysis results indicate the presence of "Chrysotile" asbestos within the residence. Please refer to ***Appendix I*** **for Bulk Sample Analysis** results.

- Asbestos containing **Lineal Pipeline Insulation** is present within the basement bedroom closet. This material has been identified with a red "ASBESTOS" stencil.

- **Mud Compound on the Pipeline Fittings** was identified on the pipeline spanning the basement dining room. This material has been identified with a red dot to signify the ACM.

- The **9-inch by 9-inch vinyl floor tile** has been identified as ACM on the floor plans. Please refer to appendix II.

- **Any material located within ceilings, wall cavities, pipe chases or other inaccessible areas or areas of limited access shall be considered asbestos-containing until testing of the material can determine the presence or absence of asbestos.**

Included in *Appendix II* of this report is a Floor Plan of the facility identifying the bulk sample locations. The owner may consider removing the ACM in the future as a result of the limited quantities present. The facility would be removed from the list that requires annual monitoring of the Asbestos material.

2.0 INTRODUCTION

Bersch & Associates Ltd. was retained by the City of Saskatoon to conduct bulk sampling to verify the presence or absence of asbestos content within the Bowerman House to satisfy the government registry. Due to the findings and size of the facilities a full asbestos audit was completed so further investigation would not be required. The purpose of the survey was to identify all accessible Asbestos-Containing Materials (ACM) located throughout the residence and note any concerns relating to the ACM identified. This report gives an account of the inspection 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 Berschiminsky of Bersch & Associates Ltd. completed the survey on April 29, 2013. A review of this report shall be conducted with all trades that are entering the facilities to perform maintenance or renovation activity. This will ensure they are familiar with the types and locations of asbestos-containing materials present within each facility and prevent any uncontrolled disturbance and/or possible exposure to asbestos.

3.0 METHODOLOGY

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.

Seven (7) bulk samples of suspect asbestos-containing materials were collected. Refer to Appendix I for a copy of the Bulk Sample Analysis Report, Appendix II floor plan for the bulk sample locations and Appendix III for the photographs of the bulk material sampled. All bulk samples collected were analyzed by Bersch & Associates Ltd. laboratory in accordance with the current U.S. 40 CFR Part 763, Vol. 52, No.210 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%.

4.0 RECOMMENDATIONS

Throughout the survey of the Bowerman House the Asbestos Containing Materials were assessed and given a Priority Rating of One, Two or Three, with Priority One being the items requiring the most immediate attention. As a result, a Priority Three rating was assigned to the ACM identified within the residence. The asbestos material may be managed. *Consider all rooms, besides the ones mentioned in this report, to have No Accessible Asbestos Containing Materials (ACM).* The owner may consider removing the ACM in the future as a result of the limited quantities present. The facility would be removed from the list that requires annual monitoring of the Asbestos material.

A. Basement Bedroom Closet

Lineal Pipeline Insulation was identified on the section of overhead pipeline within the closet. This material was observed to be in moderate to good condition with a low potential for disturbance. The material may be managed, however due to the quantity present, removal of the insulation may be considered to eliminate all concerns in the future.

PRIORITY:	**THREE**
CONDITION:	**MODERATE TO GOOD**
POTENTIAL FOR DISTURBANCE:	**LOW**
ACTION:	**MANAGE / REMOVE**

B. Basement Bathroom

9-inch by 9-inch floor tile was identified as containing asbestos. This material was observed to be in good condition with a low potential for disturbance. The material may be managed, however due to the quantity present, removal of the floor tile may be considered to eliminate all concerns in the future.

PRIORITY:	**THREE**
CONDITION:	**GOOD**
POTENTIAL FOR DISTURBANCE:	**LOW**
ACTION:	**MANAGE / REMOVE**

C. Basement Dining Room

Mud compound on the pipeline fittings was identified as containing asbestos. This material was observed to be in good condition with a low potential for disturbance. The material may be managed, however due to the quantity present, removal of the mud compound may be considered to eliminate all concerns in the future.

PRIORITY:	**THREE**
CONDITION:	**GOOD**
POTENTIAL FOR DISTURBANCE:	**LOW**
ACTION:	**MANAGE / REMOVE**

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 carcinogenisis 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.

For the specifics of this report Management of the asbestos containing materials is the recommended planned activity. In the event of renovations or maintenance to 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, December 1996.

.2 Province of Saskatchewan Human Resources, Labor, and Employment "The Management of Asbestos" January, 1991.

.3 USEPA, 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 Inspectors & Management Planners

.5 McCrone Research Institute Course Hayward California " Asbestos Identification"

APPENDIX I

BULK SAMPLE ANALYSIS REPORT

BERSCH & ASSOCIATES LTD.

May 8, 2013

City of Saskatoon
Infrastructure Services Department
1101 Avenue P North
Saskatoon, SK.
S7L 7K6

ATTENTION: Brent Anderson

SUBJECT: Bowerman House – Bulk Material Analysis

Please find attached our laboratory's results for the bulk material samples collected from the residence located at 1328 Avenue K South, Saskatoon SK. The samples were analyzed in our laboratory for the identification of asbestos.

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

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

Sincerely,

Brad Berschiminsky
Bersch & Associates Ltd.
File: B67BLD29b

Bersch & Associates Ltd.
Box 3568
Humboldt, Sask. S0K 2A0

B67BAD29b

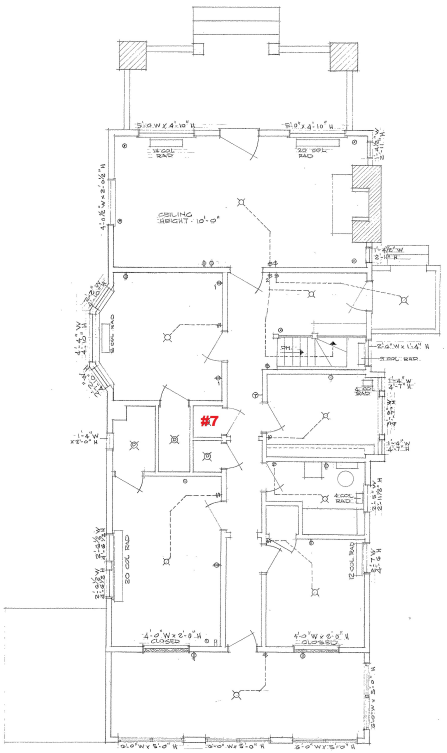
BULK SAMPLE ANALYSIS REPORT

PROJECT NO. B67.13
CLIENT: City of Saskatoon
Infrastructure Services - Facilities Branch
Contact: Brent Anderson
Location: Bowerman House - 1328 Avenue K South, Saskatoon SK.

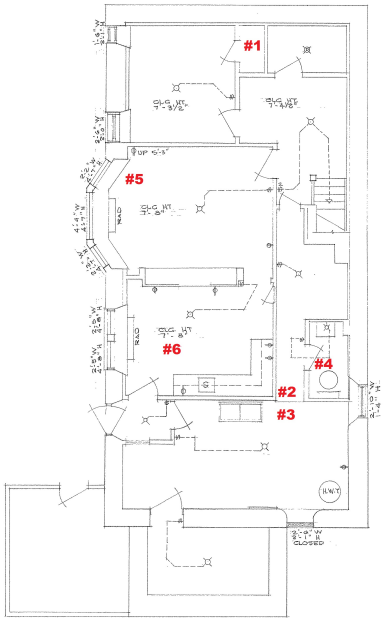
NO.	DATE	SAMPLE INFORMATION	ASBESTOS	%	ANALYST
B1	29-Apr-13	Basement Bedroom Closet - Lineal overhead aircell pipeline insulation	Chrysotile	75	WB
B2	29-Apr-13	Basement Hallway - Sheet floor covering white / beige markings	None detected		WB
B3	29-Apr-13	Basement Furnace Room - Sheet floor covering white / blue square pattern	None detected		WB
B4	29-Apr-13	Basement Bathroom - 9" X 9" tan / white & light brown streak floor tile	Chrysotile	1 to 5	WB
B5	29-Apr-13	Basement Dining Room - Mud compound on overhead pipeline fittings adjacent the windows	Chrysotile	60	WB
B6	29-Apr-13	Basement Kitchen - Sheet floor covering 5-inch square pattern white / black 1-inch square pattern	None detected		WB
B7	29-Apr-13	Main Level Closet across from Office - Battleship sheet floor covering	None detected		WB

APPENDIX II

FLOOR PLANS



UPPER FLOOR
1/4" = 1'-0"



LOWER FLOOR
1/4" = 1'-0"

CITY OF SASKATOON
AM0183871

CITY OF
Saskatoon
BUILDING DEPARTMENT
DESIGN SECTION

DO NOT SCALE DRAWINGS.
VERIFY ALL DIMENSIONS, DATUM LINES, AND ELEVATIONS PRIOR TO COMMENCEMENT OF WORK.
ANY DIFFICULTIES DISCOVERED DURING CONSTRUCTION MUST BE REPORTED.

NUMBER	DESCRIPTION	DATE

REVISIONS

CONSULTANT

SEAL

DESIGNED BY:
DRAWN BY: V.S.
APPROVAL:
SCALE: 1/4" = 1'-0"
DATE: NOV. 1987

PROJECT
BOWERMAN HOUSE
1328 AVENUE K, S.
SASKATOON SASK.

SHEET TITLE
MEASURED DRAWING

SHEET NO.

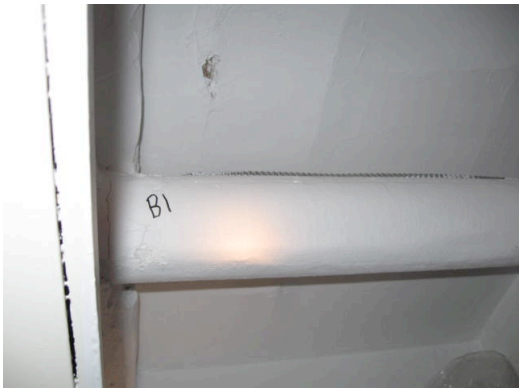
PROJECT NO.
8742

APPENDIX III

BULK SAMPLE PHOTOS

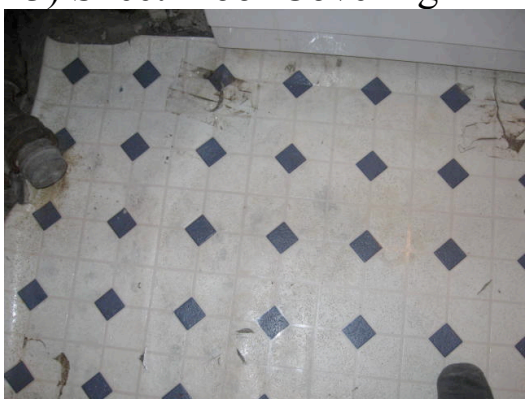
BULK SAMPLE PHOTOS

#1) Lineal Pipeline Insulation



#2) Sheet Floor Covering

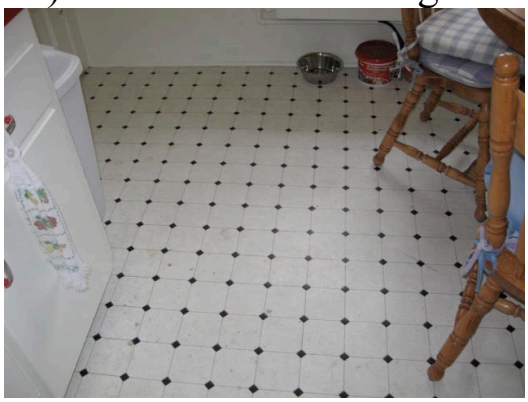
#3) Sheet Floor Covering



#4) 9” X 9” Floor Tile

#5) Mud Compound Fitting

#6) Sheet Floor Covering



#7) Sheet Floor Covering